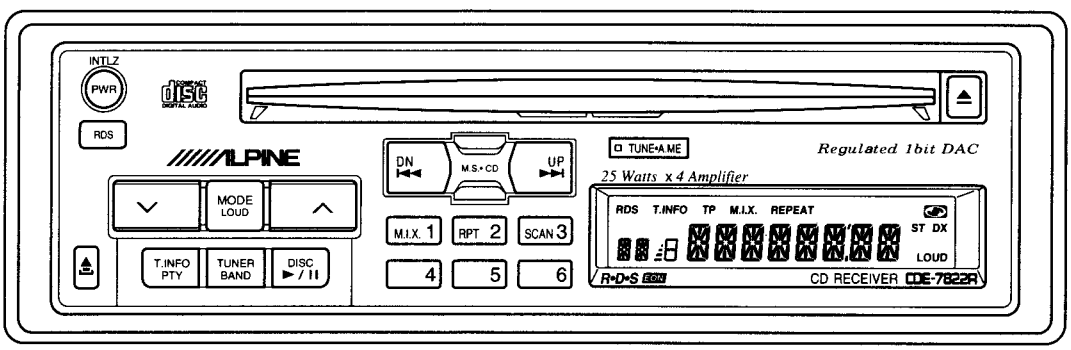
ALPINE®

SERVICE MANUAL

FM/MW/LW/RDS Compact Disc Receiver

COMPACT disc DIGITAL AUDIO

● For the CD player mechanism parts (DP24H02A) of this model, refer to the Service Manual • DP-H Series (68E21967S01).



CDE-7822R/ CDE-7820R

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Spare Schematic Diagram Inserted.

Specifications

CD SECTION

System	Optical (Compact Disc system)
Quantizing Bit Number	16bit Linear system
Channels	2Channels
Channel Balance (at 1kHz)	0±3dB
Distortion (at 1kHz)	0.1%
Frequency Response (Ref. 1kHz)	17Hz : 0±3dB
	127Hz : 0±2dB
	10.007kHz : 0±2dB
	19.997kHz : 0±4dB
S/N Ratio	85dB
Separation (at 1kHz)	55dB
De-Emphasis (Ref. 1kHz)	4kHz : -20±3dB
	16kHz : -20±3dB

FM RADIO

Intermediate Frequency	10.7±0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (Mono, 30dB S/N, at 98.1MHz)	17.2dBf
-3dB Limiting Sensitivity (at 98.1MHz)	19.2dBf
S/N Ratio (Stereo, at 98.1MHz)	56dB
Image Rejection (at 106.1MHz)	40dB
IF Rejection (at 90.1MHz)	60dB
Distortion (Input 60dB μ, at 98.1MHz)	1%
Frequency Response (Ref. 400Hz, at 98.1MHz)	100Hz : 0±3dB
	10kHz : -12±3dB
Stereo Separation (1kHz, at 98.1MHz)	20dB
PS Sensitivity (at 98.1MHz)	36.2dBf
TP Sensitivity (at 98.1MHz)	36.2dBf

MW RADIO

Intermediate Frequency	450kHz
Frequency Range	531~1,602kHz
Usable Sensitivity (20dB S/N, at 999kHz)	35dB
S/N Ratio (at 999kHz)	44dB
Image Rejection (at 1,404kHz)	50dB
IF Rejection (at 603kHz)	60dB
Distortion (at 999kHz)	1.5%
Frequency Response (Ref. 400Hz, at 999kHz)	100Hz : -3±4dB
	4kHz : -12+6, -12dB

LW RADIO

Intermediate Frequency	450kHz
Frequency Range	153~281kHz
Usable Sensitivity (20dB S/N, at 216kHz)	41dB
S/N Ratio (at 216kHz)	42dB
Image Rejection (at 270kHz)	40dB
IF Rejection (at 162kHz)	50dB
Distortion (at 216kHz)	1.5%
Frequency Response (Ref. 400Hz, at 216kHz)	100Hz : -3 ±4dB
	4kHz : -12+6, -12dB

GENERAL

Power Supply	DC14.4V
Power Output/Impedance (T.H.D.10%)	11W/4ohm
Pre Output/Impedance	1.2V/10kohm
Semiconductors	23IC's, 62Transistors, 31Diodes, 8Zener Diodes (○)
	22IC's, 53Transistors, 30Diodes, 8Zener Diodes (●)
Dimensions (W×H×D)	Chassis : 178×50×152mm
	Nose : 169×45×18mm
Weight	1.5kg

Notes : Due to Continuing product improvement, specifications and designs are subject to change without notice.
○ : For CDE-7822R Model only, ● : For CDE-7820R Model only , Others : Common.

In Case of Difficulty

If you encounter a problem, please review the items in the following checklist. This guide will help you isolate the problem if the unit is at fault. Otherwise, make sure the rest of your system is properly connected or consult your authorized Alpine dealer.

Initial Turn-on After Installation

Symptom/Symptôme/Síntoma	Cause and Solution
No function or display./Fonctions inopérantes ou pas d'affichage./La unidad no funciona ni hay visualización.	• Car's ignition is off. – If connected following instructions, the unit will not operate with the car's ignition off.
	• Improper power lead connections. – Check power lead connections.
	• Blown fuse. – Check the fuse on the rear panel of the unit; replace with the proper value if necessary.

In Case of Difficulty

Radio Mode

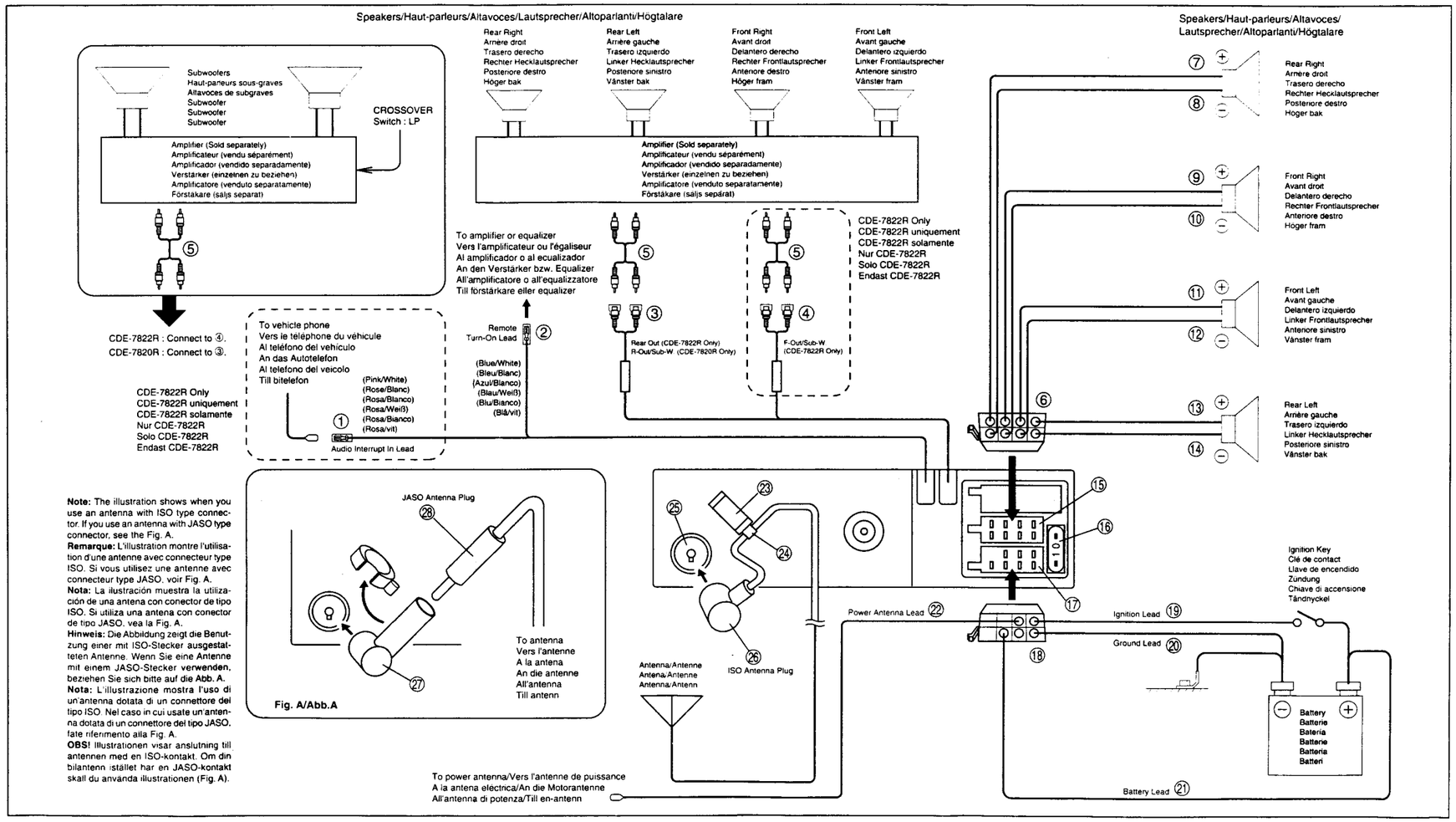
Symptom/Symptôme/Síntoma	Cause and Solution
Unable to receive stations./Impossible de recevoir les stations./Es imposible recibir emisoras.	• No antenna or open connection in cable. – Make sure the antenna is properly connected; replace the antenna or cable if necessary.
Unable to tune stations in the seek mode./Impossible d'accorder les stations en mode de recherche automatique./Es imposible sintonizar emisoras en el modo de búsqueda.	• You are in a weak signal area. – Make sure the tuner is in the DX mode. • If the area you are in is a primary signal area, the antenna may not be grounded and connected properly. – Check your antenna connections; make sure the antenna is properly grounded at its mounting location. • The antenna may not be the proper length. – Make sure the antenna is fully extended; if broken, replace the antenna with a new one.
Broadcast is noisy./Réception parasitée./La recepción es ruidosa.	• The antenna is not the proper length. – Extend the antenna fully; replace it if it is broken. • The antenna is poorly grounded. – Make sure the antenna is grounded properly at its mounting location.

In Case of Difficulty

CD Mode

Symptom/Symptom/Symptôme	Cause and Solution
CD not functioning./Le changeur CD ne fonctionne pas./El cambiador de discos compactos no funciona.	• Out of operating temperature range +50°C (+120°F) for CD. – Allow the car's interior (or trunk) temperature to cool.
CD playback sound is wavering./Le son de lecture de CD est déformé./El sonido de reproducción de un disco compacto oscila.	• Moisture condensation in the CD Module. – Allow enough time for the condensation to evaporate (about 1 hour).
CD insertion not possible./Impossible d'insérer un CD./No es posible insertar un disco compacto.	• A CD is already in the CD player. – Eject the CD and remove it. • The CD is being improperly inserted. – Make sure the CD is being inserted following instructions in the Owner's Manual.
Unable to fast forward or backward./Avance rapide ou inversion impossibles./Es imposible avanzar y retroceder rápidamente.	• The CD has been damaged. – Eject the CD and discard it; using a damaged CD in your unit can cause damage to the mechanism.
Sound skips due to vibration./Pertes de son dues à des vibrations./El sonido salta debido a las vibraciones.	• Improper mounting. – Securely re-mount the unit. • Disc is very dirty. – Clean the disc. • Disc has scratches. – Change the disc.
Sound skips without vibration./Pertes de son non dues à des vibrations./El sonido salta sin haber vibraciones.	• Dirty or scratched disc. – Clean the disc; damaged discs should be replaced.

Connections/Anschlüsse/Connexions/Collegamenti/Conexiones/Anslutningar



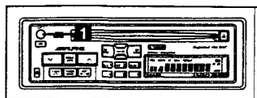
Note: The illustration shows when you use an antenna with ISO type connector. If you use an antenna with JASO type connector, see the Fig. A.
Remarque: L'illustration montre l'utilisation d'une antenne avec connecteur type ISO. Si vous utilisez une antenne avec connecteur type JASO, voir Fig. A.
Nota: La ilustración muestra la utilización de una antena con conector de tipo ISO. Si utiliza una antena con conector de tipo JASO, vea la Fig. A.
Hinweis: Die Abbildung zeigt die Benutzung einer mit ISO-Stecker ausgestatteten Antenne. Wenn Sie eine Antenne mit einem JASO-Stecker verwenden, beziehen Sie sich bitte auf die Abb. A.
Nota: L'illustrazione mostra l'uso di un'antenna dotata di un connettore del tipo ISO. Nel caso in cui usate un'antenna dotata di un connettore del tipo JASO, fate riferimento alla Fig. A.
OBS! Illustrationen visar anslutning till antennen med en ISO-kontakt. Om din bilantenn istället har en JASO-kontakt skall du använda illustrationen (Fig. A).

Fig. A/Abb.A

① **Audio Interrupt In Lead (Pink/White) (CDE-7822R Only)**
② **Remote Turn-On Lead (Blue/White)**
③ **Rear Output RCA Connectors (CDE-7822R Only)**
③ **Rear Output/Subwoofer RCA Connectors (CDE-7820R Only)**
④ **Front Output/Subwoofer RCA Connectors (CDE-7822R Only)**
⑤ **RCA Extension Cable (Sold Separately)**
⑥ **ISO Connector (Speaker Output, Female)**
⑦ **Rear Right (+) Speaker Output Lead (Violet)**
⑧ **Rear Right (–) Speaker Output Lead (Violet/Black)**
⑨ **Front Right (+) Speaker Output Lead (Gray)**
⑩ **Front Right (–) Speaker Output Lead (Gray/Black)**
⑪ **Front Left (+) Speaker Output Lead (White)**
⑫ **Front Left (–) Speaker Output Lead (White/Black)**
⑬ **Rear Left (+) Speaker Output Lead (Green)**
⑭ **Rear Left (–) Speaker Output Lead (Green/Black)**
⑮ **ISO Connector (Speaker Output, Male)**
⑯ **Fuse (10A)**
⑰ **ISO Power Supply Connector (Power, Male)**
⑱ **ISO Power Supply Connector (Power, Female)**
⑲ **Ignition Lead (Red)**
⑳ **Ground Lead (Black)**
㉑ **Battery Lead (Yellow)**
㉒ **Power Antenna Lead (Blue)**
㉓ **Hook (Large)**
㉔ **Hook (Small)**
㉕ **Antenna Receptacle**
㉖ **ISO Antenna Plug**
㉗ **JASO/ISO Antenna Adaptor (Included)**
㉘ **JASO Antenna Plug**

Basic Operation

Turning Power On and Off



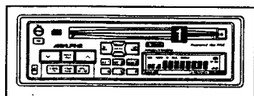
1

Press to turn on the unit.

Note: The unit can be turned on by pressing any button except the eject ≜ button or by inserting a CD.

Press again to turn off the unit.

Non Fader Pre-Out (N.F.P.) On and Off



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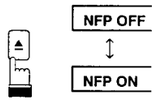


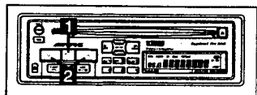
Press the Eject button for at least **3** seconds. With each press, N.F.P. is toggled On or Off.

N.F.P. ON: In this position, the Front Pre-Output will not be affected by the fader. This is ideal for driving a subwoofer amplifier.

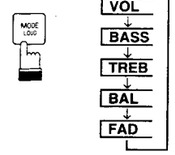
N.F.P. OFF: Returns to normal fader mode.

Notes:
- Initial mode is "NFP OFF".
- Set the N.F.P. to OFF unless the sub-woofer is used.

Adjusting Volume/Treble/ Bass/Balance/Fader



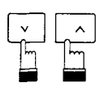
1



Press repeatedly to choose the desired mode.

Note: If the ⊡ or ⊡ button is not pressed in 5 seconds after selecting the TREB, BASS, BAL and FAD modes, the unit automatically returns to the VOL mode.

2



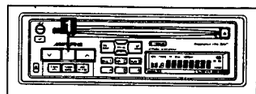
Press these buttons until the desired sound is obtained in each mode.

Notes:
- These buttons have a "Dual Speed" function (CDE-7822R only). Pressing lightly will change the level slowly. Pressing the buttons harder will change the level quickly.
- The BASS and TREBLE settings for each source (FM, AM and CD) will be automatically memorized whenever the settings are changed.
- In case that the Equalizer is connected, the Bass and Treble are adjusted on the Equalizer.

Basic Operation

Turning Loudness On/Off

Loudness introduces a special low- and high-frequency emphasis at low listening levels to compensate for the ear's decreased sensitivity to bass and treble sound.



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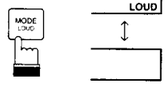
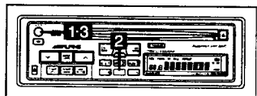


Press for at least **2** seconds to activate or deactivate the loudness mode.

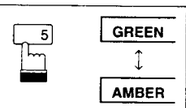
Changing Lighting Colour (CDE-7822R only)



1

Press the PWR button for at least **2** seconds.

2



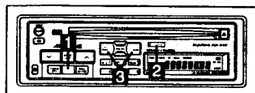
Press the Preset 5 button to change the lighting colour between green and amber.

3

Press the PWR button to set the lighting colour.

Radio Operation

Manual Tuning



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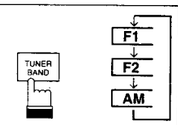
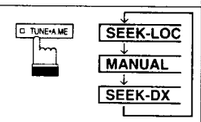


Press repeatedly until the desired radio band is displayed.

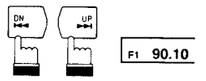
2



Press repeatedly until "MANUAL" is displayed.

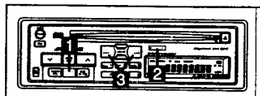
Note: Initial mode is SEEK-DX.

3

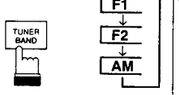


Press the DN or UP button to move downward or upward one step respectively until the desired station frequency is displayed.

Automatic Seek Tuning

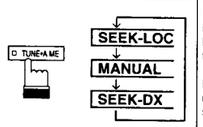


1



Press repeatedly until the desired radio band is displayed.

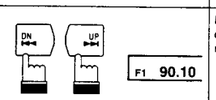
2



Press the button to illuminate the DX indicator in the display. With the DX mode activated, both strong and weak stations will be tuned in the Auto-Seek operation.

Press the button again to return to the local mode. The DX indicator will turn off and only strong radio stations will be tuned.

3

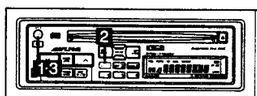


Press the DN button or UP button to automatically seek a station downward or upward respectively.

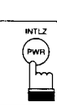
Radio Operation

Adjusting FM Signal Level

If the difference in volume levels between the FM station and the CD player is great, you can adjust the FM signal level to make the difference smaller.

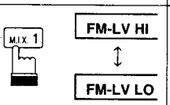


1



Press the PWR button for at least **2** seconds.

2

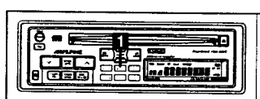


Press to select the desired signal HI (High) or LO (Low) level.

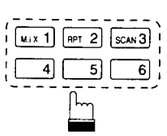
3

Press to preset the FM signal level in memory and deactivate the adjusting mode.

Manual Storing of Station Presets



1

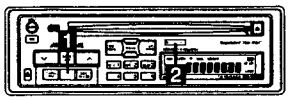


1. Tune in the desired radio station you wish to store in the preset memory.
2. Press any one of the preset buttons (1 through 6) for at least **2** seconds until the frequency display blinks.
3. Press the preset button into which you wish to store the station while the display is blinking (within 5 seconds). The display changes from blinking to steady lighting indicating that the station has been memorized. The preset number is also displayed.
4. Repeat the procedure to store 5 other stations onto the same band. Use this procedure for other bands.

A total of 18 stations can be stored in the preset memory (6 stations for each band: FM1, FM2, AM). The RDS stations can be preset in the FM1 and FM2 bands only.

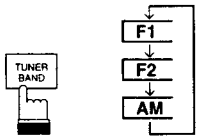
Note: If a preset memory has already been set in the same preset location, it will be cleared and the new station will be memorized.

Radio Operation



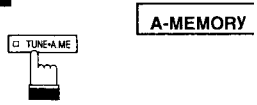
Automatic Memory of Station Presets

1



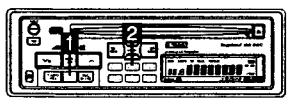
Press until the desired radio band is displayed.

2



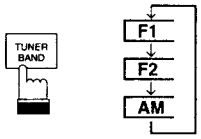
Press for at least **2** seconds. The display shows "A-MEMORY" for a second then changes the radio frequency during the auto memory operation.
The tuner will automatically seek and store 6 strong stations in the selected band in order of signal strength.
When the automatic storing has been completed, the tuner goes to the station stored in the preset location No. 1.

Note: If no stations are stored, the tuner will return to the original station you were listening to before the auto storing procedure began.



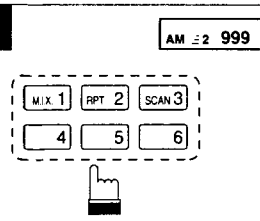
Tuning to Preset Stations

1



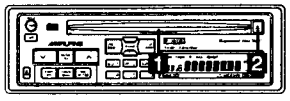
Press repeatedly until the desired band is displayed.

2



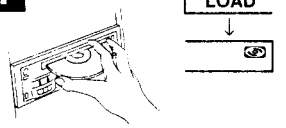
Press the station preset button that has your desired radio station in memory. The display shows the preset number, band and frequency of the station.

CD Operation



Inserting/Ejecting Disc

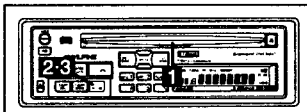
1



Insert a disc half way into the slot with the label side facing up. The player automatically draws the disc into the disc compartment.
The Disc indicator appears to show that a disc is loaded.
Note: You can insert a 3-inch CD without using an adaptor ring.

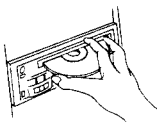
2

Press when you want to eject the CD.



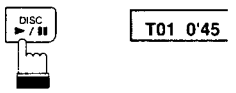
Normal Play and Pause

1



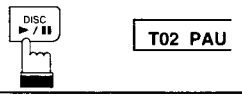
Insert a CD. The CD player begins playback from the first track on the disc. The display shows the track number and elapsed time of the track being played. When the last track is played back the player returns to the first track and begins playback from that point.

2

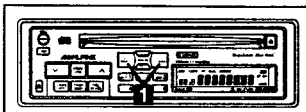


Press to start CD play.

3

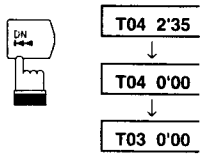


Press to temporarily stop CD playback.
To resume playback, press again.

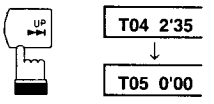


Music Sensor (Skip)

1

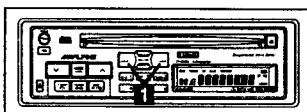


Momentarily press the ⏮ DN button once to return to the beginning of the current track. If you wish to access a track further back, repeatedly press until you reach the desired track. (The example shows the Music Sensor operation starting from track No. 4.)



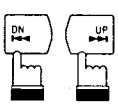
Press the UP ⏭ button once to advance to the beginning of the next track. If you wish to access a track further ahead, press repeatedly until the desired track is reached.

Note: The music sensor feature is functional in the play or pause mode.



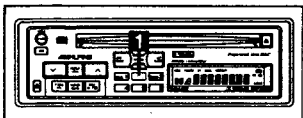
Fast Forward and Backward

1



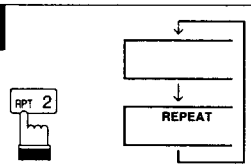
Press and hold the ⏮ DN or UP ⏭ button to quickly move backward or forward until you reach the desired section of the track.

CD Operation

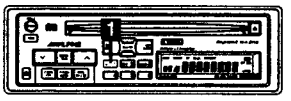


Repeat Play

1

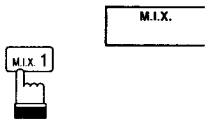


Press to play back repeatedly the track being played. The REPEAT indicator appears and the track will be played repeatedly. Press again to deactivate the repeat play.

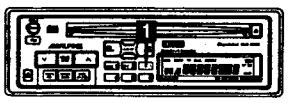


M.I.X. (Random Play)

1

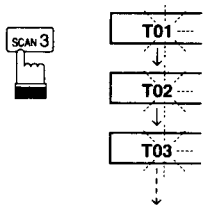


Press the button in the play or pause mode. The M.I.X. indicator will illuminate and the tracks on the disc will be played back in a random sequence. After all the tracks on the disc have been played back once, the player will begin a new random sequence play until the M.I.X. mode is canceled. To cancel M.I.X. play, press the button again.



Scanning Programmes

1

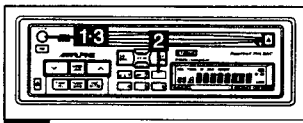


Press to activate the Scan mode. The first 10 seconds of each track will be played back in succession.

To stop the Scan, press to deactivate the Scan mode.

RDS (Radio Data System)

The RDS (Radio Data System) is a radio information system using the 57 kHz subcarrier of regular FM broadcast. The RDS allows you to receive a variety of information such as traffic information, station names, and to automatically re-tune to a stronger transmitter that is broadcasting the same programme.

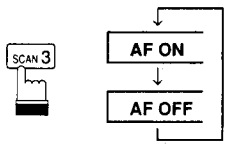


Setting RDS Reception Mode and Receiving

1

Press for at least 2 seconds.

2

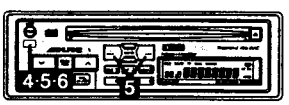


Press repeatedly to select the desired AF (Alternative Frequencies) OFF or AF ON mode.

Note: Use the AF OFF mode when automatic re-tuning is not required.

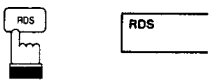
3

Press to activate the selected mode.



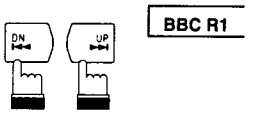
Setting RDS Reception Mode and Receiving (Continued)

4



Press to activate the RDS mode.

5



Press the DN or UP button to tune in the desired RDS station.

When the station signal being received has become weak;

A. In the AF ON mode the unit automatically re-tunes to a stronger station that carries the same programme.

B. In the AF OFF/AF ON mode

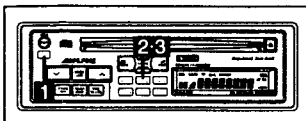
Press for more than 2 seconds to have the unit automatically search for a stronger station in the AF (Alternative Frequencies) list.
If there is no AF station, the display shows "SEEK END."

6

Press again to deactivate the RDS mode.

Note: You can tune in an RDS station while you are listening to CD play. Choose your desired station in 5 seconds after the step 4 above.

RDS (Radio Data System)



Recalling Preset RDS Stations

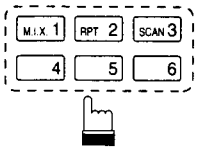
1

RDS

Press to activate the RDS mode.

2

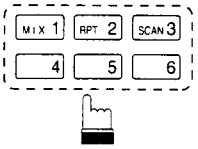
BBC R1



Press the preset location button in which your desired RDS station is preset. If the preset station's signal is weak, the unit automatically searches and tunes to a stronger station in the AF (Alternative Frequencies) list.

3

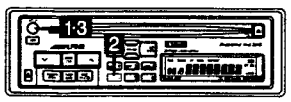
PI SEEK



If the preset station and the stations in the AF list cannot be received:

Press the same preset location button again to search again for a station in the PI (Programme Identification) list.
If there are still no stations receivable in the area, the unit displays the frequency of the preset station and the preset indicator disappears. If the signal level of the Regional (Local) station being tuned becomes too weak to receive, press the same preset location button to tune in a Regional station in other district.

Note: For presetting the RDS stations, refer to the Radio Operation section. The RDS stations can be preset in the F1 and F2 bands only.



Receiving RDS Regional (Local) Stations

1

Press for at least 2 seconds.

2

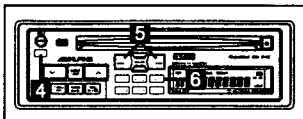
REG ON
↕
REG OFF

Press to turn on or off the REG mode.
In the REG ON mode, the unit automatically keeps receiving the related local RDS station.

3

Press to activate the selected mode.

RDS (Radio Data System)



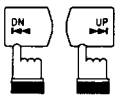
Receiving RDS Regional (Local) Stations (Continued)

4

RDS

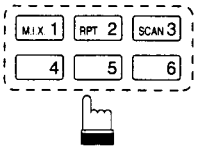
Press to activate the RDS mode.

5

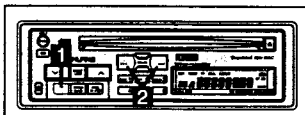


Press to tune in the desired local (regional) RDS station.

6



Press repeatedly the preset location button corresponding to your desired station during reception of a Regional station to search for a receivable Regional station. Each pressing tunes in another receivable Regional station.



Receiving Traffic Information

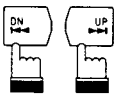
1

T.INFO

Press to display the T.INFO indicator.

2

T.INFO TP



Press the DN or UP button to select your desired traffic information station. When a traffic information station is tuned in, the TP indicator lights up.

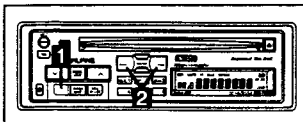
Traffic information is heard only when it is being broadcast. If traffic information is not being broadcast, the unit is set in the standby mode. When a traffic information broadcast begins, the unit automatically receives it, the display shows "TRF-INFO".

When traffic information broadcast is over, the unit will automatically set in the standby mode.

Notes:

- If the traffic information broadcast signal falls below a certain level, the unit remains in the receiving mode for 1 minute. If the signal remains below a certain level for over 1 minute, the unit is set in the standby mode for the traffic information broadcast.
- If you do not want to listen to the traffic information being received, lightly press the T. INFO button to skip that traffic information message. The T. INFO mode will remain in the ON position to receive the next traffic information message.

RDS (Radio Data System)



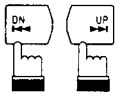
Receiving Traffic Information While Playing CD or Radio

1

T.INFO

Press until the T.INFO indicator appears.

2

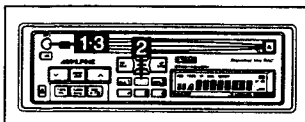


F1 101.50

Press to select a traffic information station if necessary.

- When a traffic information broadcast starts, the unit automatically mutes the CD or the regular FM broadcast.
- When the traffic information broadcast finishes, the unit automatically returns to the original source play before the traffic information broadcast began.
- **When traffic information stations cannot be received:**
  In the tuner mode:
  When the TP signal can no longer be received, an alarm will be sounded after 1 minute.
  In the CD mode:
  When the TP signal can no longer be received, the traffic information station of another frequency will be selected automatically.

Note: The receiver is equipped with the EON (Enhanced Other Networks) function in order to keep track of additional alternative frequencies to the AF list. If the station being received does not broadcast the traffic information, the receiver automatically tunes in the related station that broadcasts the traffic information when it occurs.

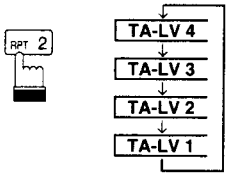


Presetting Volume Level for Traffic Information

1

Press for at least **2** seconds.

2

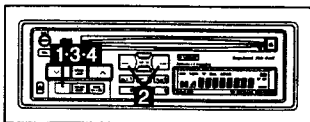


Press until the desired volume level is obtained.

3

Press again to preset the volume level for the traffic information listening.

RDS (Radio Data System)



PTY Tuning

1

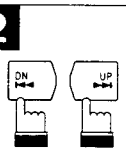
NEWS

Press for at least **2** seconds to activate the PTY mode.
The PTY (Programme Type) of the station being currently received will be displayed for 5 seconds.

- If there is no receivable PTY broadcast, "NONE" will be displayed for 5 seconds.
- If no RDS station can be received, the display shows "NO RDS".

Note: If no button is pressed within 5 seconds after pressing the PTY button, the PTY mode will be automatically cancelled.

2



LIGHT M
CLASSICS
OTHER M

Press within 5 seconds to choose the desired programme type while the PTY programme type is being displayed.

3

The tuner starts searching for a station when the PTY button is pressed within 5 seconds after selecting the PTY programme type. The chosen programme type indicator blinks during searching and lights when a station is found.

If no station is found, "NO PTY" will be displayed for 5 seconds.

4

Press for **2** seconds to cancel the PTY mode.

Disassembly Instructions

1. Removal of Nose Unit

(1) Refer to the Owner's Manual (Part No. 68P61329W61).

2. Removal of Front Escutcheon

(1) After remove the top cover and face plate, remove six Hooks (A) as shown in Figure 1.

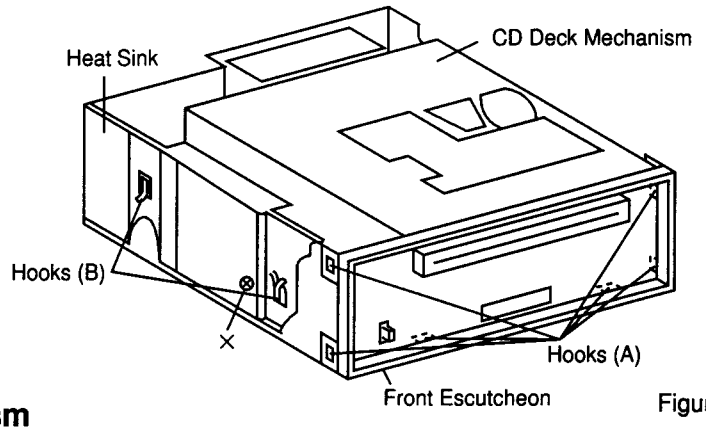


Figure 1

3. Removal of CD Deck Mechanism

(1) After removal of the Front Escutcheon, remove four screws marked "○" as shown in Figure 2.

(2) Disconnect one connector from the Main P.C.Board.

4. Removal of Main P.C.Board

(1) After removal of CD Deck Mechanism, remove the Heat Sink by removing two Hooks (B) and a screw marked "×" as shown in Figure 1.

(2) Remove a screw marked "△" as shown in Figure 3.

(3) Remove the solder (C) and four Hooks (D) as shown in Figure 2.

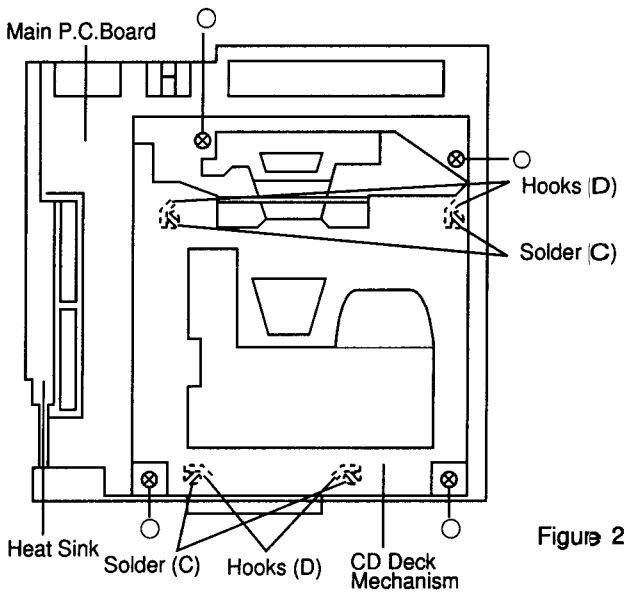


Figure 2

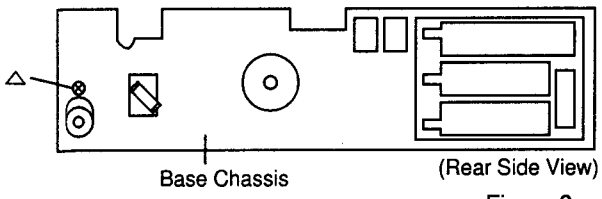


Figure 3

5. Removal of Front P.C.Board

(1) After removal of Nose Unit, remove four screws marked "□" and one Hook (E) as shown in Figure 4.

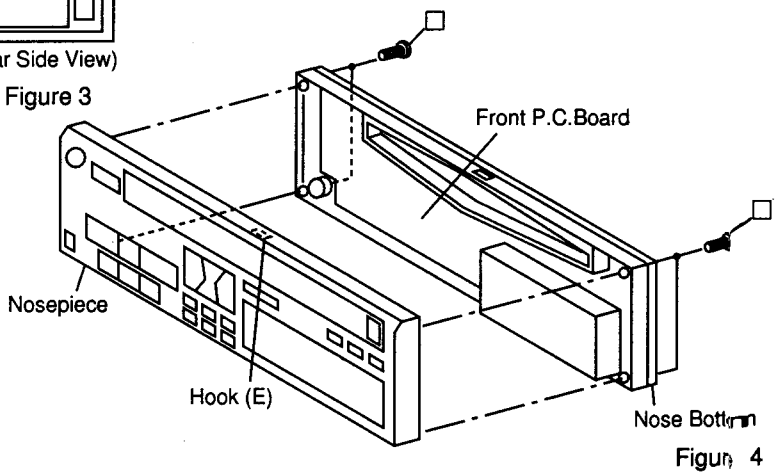
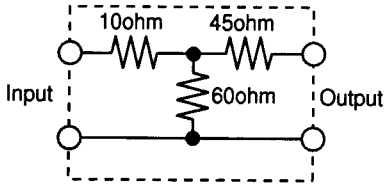


Figure 4

Adjustment Procedures

1. FM SECTION

(1) Dummy Antenna Circuit



For 50 ohm FM Signal Generator

Figure 5

(2) Connections

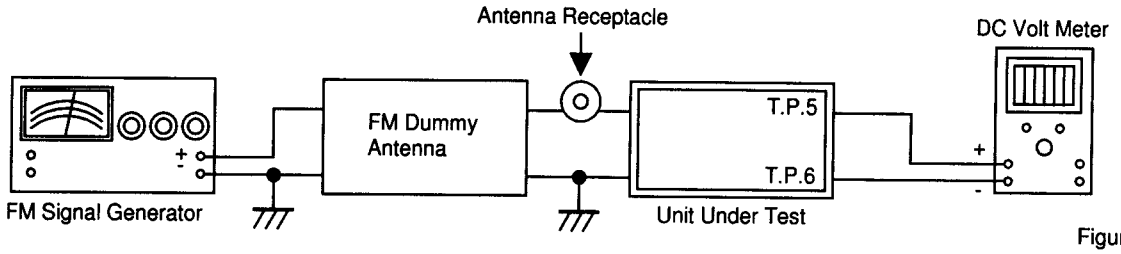


Figure 6

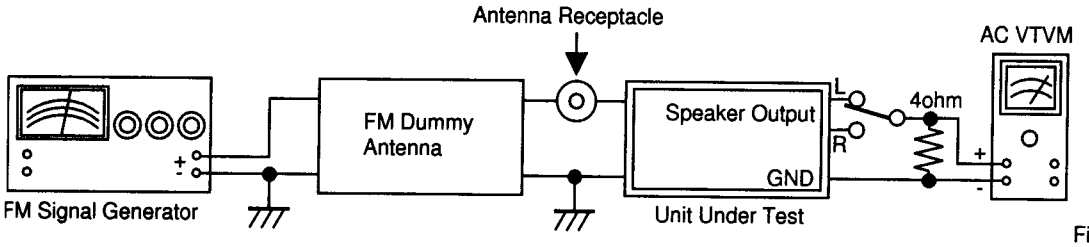


Figure 7

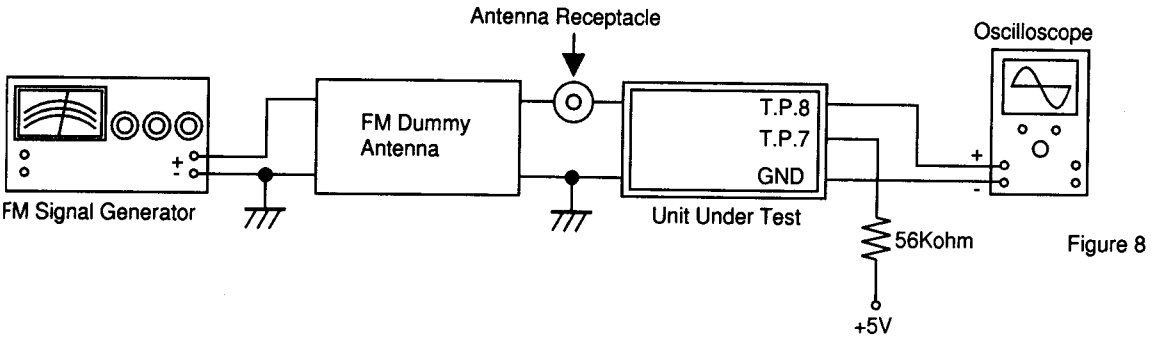


Figure 8

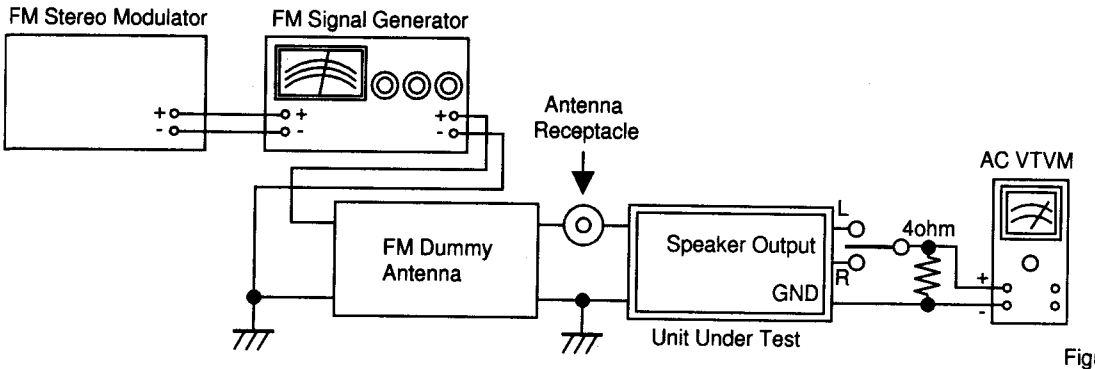
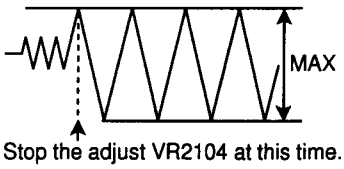


Figure 9

(3) Control Settings

Power Switch ..... ON
Fader Control ..... Center Position
Balance Control ..... Center Position
Treble Control ..... Center Position
Bass Control ..... Center Position
Band Switch ..... FM
Others ..... OFF

(4) Adjustment Procedures

Step	Description		Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	IF Adjustment		Figure 6	98.1MHz, 72dB (Mod. OFF)	98.1MHz	T.P.5 T.P.6	Adjust L2101 for to 0±15mV.
2	Noise Level Adjustment	(1)	Figure 7	98.1MHz, 72dB (Mod. 400Hz, Dev. 40kHz)	98.1MHz	Speaker Output	Adjust MAIN VOLUME (S410, 417 (○), S411, 418(●)) to obtain 2V output. This value is 0dB.
		(2)	Figure 7	98.1MHz, -20dB (Mod. 400Hz, Dev. 40kHz)	98.1MHz	Speaker Output	Adjust VR2105 to 37 ±5dB output at SG level minimum.
3	Seek Stop Adjustment		Figure 8	98.1MHz, 30dB (Mod. 400Hz, Dev. 40kHz)	98.1MHz	T.P.7 T.P.8	Adjust VR2104 for the waveform changing to maximum output. Figure : Waveform of T.P.8 output.  Stop the adjust VR2104 at this time.
4	Stereo Separation Adjustment (Lch)		Figure 9	98.1MHz, 72dB (Stereo 1kHz, Lch only)	98.1MHz	Speaker Output	Adjust VR2103 for Rch output to be minimum and confirm Lch and Rch output level difference is more than 25dB.
5	Stereo Blend Adjustment (Lch)		Figure 9	98.1MHz, 40dB (Stereo 1kHz, Lch only)	98.1MHz	Speaker Output	Adjust VR2102 for Lch and Rch output level difference to be 8 ±0.5dB.
6	Stereo Separation Adjustment (Rch)		Figure 9	98.1MHz, 72dB (Stereo 1kHz, Rch only)	98.1MHz	Speaker Output	Proceed same adjustment under step 4 by alternating Lch and Rch.
7	Stereo Blend Adjustment (Rch)		Figure 9	98.1MHz, 40dB (Stereo 1kHz, Rch only)	98.1MHz	Speaker Output	Proceed same adjustment under step 5.

Notes : ○ : For CDE-7822R Model only, ● : For CDE-7820R Model only , Others : Common.

2 Compact Disc SECTION

(1) Connections

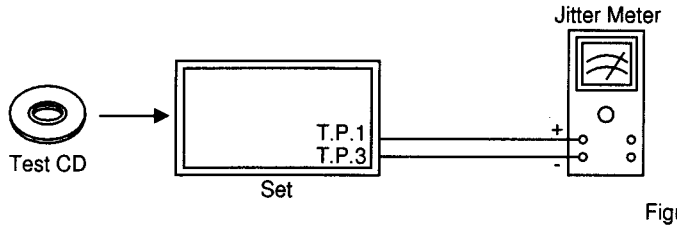


Figure 10

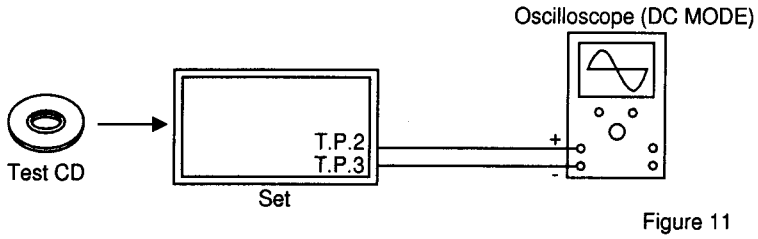


Figure 11

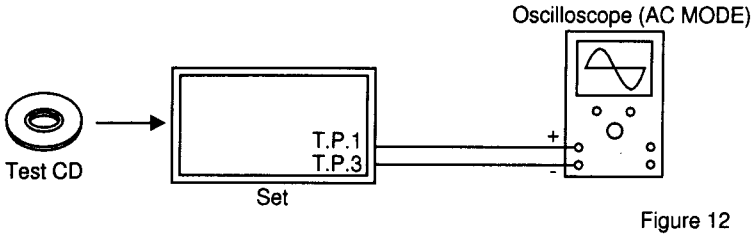


Figure 12

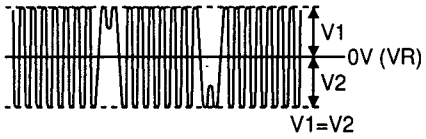
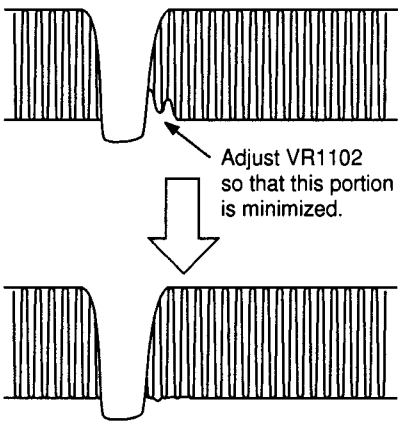
(2) Control Settings

Power Switch	ON
Fader Control	Center Position
Balance Control	Center Position
Treble/Bass Control	Center Position
Others	OFF

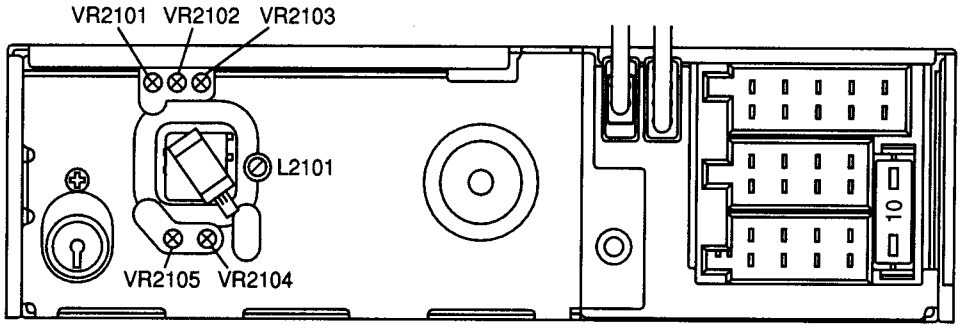
(3) The necessaries for adjustment

DP-H Extension Cord
Assy., EX Cord Kit for DP-H Mechanism
Part No. 01E11375S01
See Adjustment Locations (Figure 13)

(4) Adjustment Procedures

Step	Description	Test CD	Connection	Test Point	Adjustment Point	Adjustment
1	Jitter Adjustment	TCD-782 Track No.1 (A-BEX)	Figure 10	T.P.1 T.P.3	VR1103	1 : Set the mode to playback with the test disc loaded. 2 : First, rotate VR1103 fully counterclockwise. 3 : Using the jitter meter, measure the T.P.1 signal. 4 : Next, carefully rote VR1103 clockwise until the jitter meter shows a minimum value and then increases by +0.5nS from the minimum value.
2	Tracking Balance Adjustment	TCD-782 Track No.1 (A-BEX)	Figure 11	T.P.2 T.P.3	VR1101	1 : Set the mode to playback with the test disc loaded. 2 : Use wire to connect T.P.3 to T.P.4. 3 : Using the oscilloscope, measure the T.P.2 signal in reference to VR. (VR standard=0V) 4 : Adjust VR1101 so that the positive and negative deflection widths of the T.P.2 signal are at the same level, relative to VR (0V). (The entire waveform moves up and down.)  5 : After adjustment, remove the wire connecting to T.P.3 to T.P.4.
3	Tracking Offset Adjustment	TCD-721 Track No.6 (A-BEX)	Figure 12	T.P.1 T.P.3	VR1102	1 : Set the mode to playback with the test disc loaded. 2 : Using the oscilloscope, measure the T.P.1 signal. 3 : Adjust VR1102 in order to minimum the waveform induced by the reaction to the omission of the T.P.1 signal. 4 : Conduct the tracking balance adjustment once again. 

Adjustment Locations



(Rear Side View)

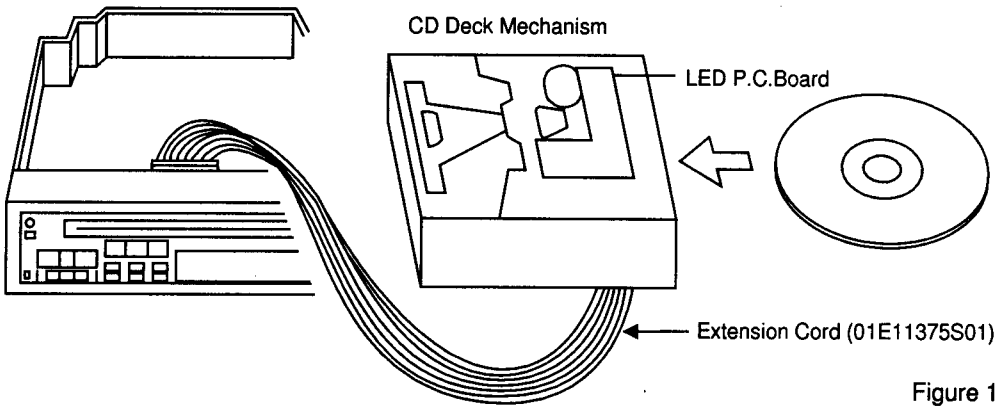


Figure 13

Note : For the Adjustment parts (S410, 417 (○), S411, 418 (●), VR1101, 1102, 1103) and Test Points, refer to the Parts Layout on P.C.Boards and Wiring Diagram.

Description of IC Terminal

75099W03 : IC601

No.	Symbol	I/O	Terminal Description
1	KEY-3	I	Key Data Input Terminal.
2	KEY-2		
3	KEY-1		
4	GND	—	GND Terminal for A/D Converter.
5	INTLZ	I	Initialized Movement Strike Out Terminal.
6	22R/$\overline{20R}$	I	Model Set Up Terminal.
7	AV_{REF}	—	Reference Voltage Terminal for A/D Converter.
8	PULL-UP	—	Pull-Up Terminal.
9	NC	—	No Connection.
10	○ AMBER	O	ORG/GRN Switching Control Terminal.
	● NC	—	No Connection.
11	$\overline{LCD\text{-}INH}$	O	LCD Driver INH Output Terminal.
12	LCD-DATA	O	LCD Driver DATA Output Terminal.
13	LCD-CLK	O	LCD Driver CLK Output Terminal.
14	LCD-CE	O	LCD Driver CE Output Terminal.
15	NC	—	No Connection.
16			
17			
18	$\overline{PS\text{-}OFF}$	I	Station Indicate OFF Mode Terminal.
19	POW-ON	O	Power On Output Terminal.
20	NC	—	No Connection.
21			
22			
23	L-CONT	O	Disc Detection Power Control Output Terminal.
24	SOL	O	Solenoid Keep Output Terminal.
25	LOAD-FWD	O	Loading Motor + Output Terminal.
26	LOAD-BWD	O	Loading Motor - Output Terminal.
27	PH-E	I	Reload Detection Terminal.
28	PH-D	I	8cm Disc End Detection Terminal.
29	PH-C	I	8cm Disc Detection Terminal.
30	PH-B	I	Eject-End Detection Terminal.
31	PH-A	I	Disc In Detection Terminal.
32	V-CONT	O	CD Power Control Terminal.
33	GND	—	GND Terminal.
34	LIMIT-SW	I	Limit Detection Terminal.
35	$\overline{CAM\text{-}END}$	I	Disc Clamp Detection Terminal.
36	BUS 0	I/O	Communication Terminal for CD Signal Management IC.
37	BUS 1		

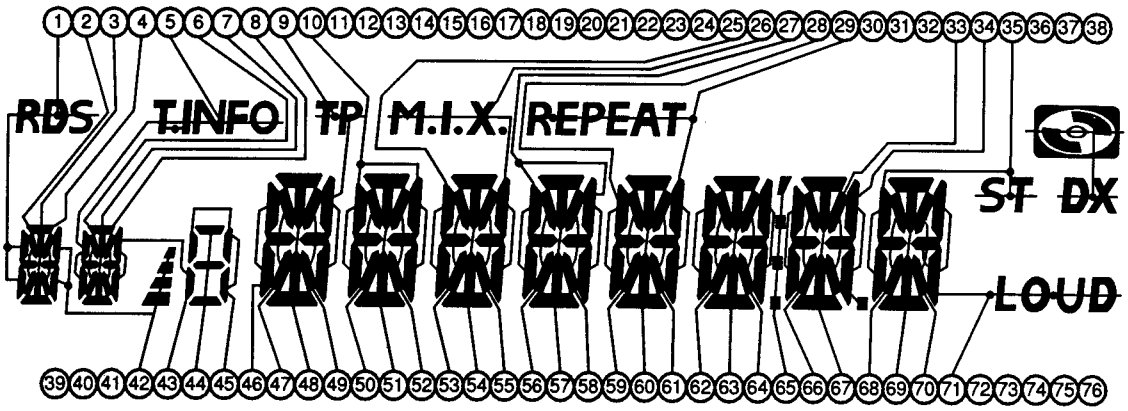
Notes : ○ : For CDE-7822R Model only, ● : For CDE-7820R Model only , Others : Common.

No.	Symbol	I/O	Terminal Description
38	BUS 2	I/O	Communication Terminal for CD Signal Management IC.
39	BUS 3	I/O	
40	BUCK	O	
41	CCE	O	
42	LOCK	I	Lock Status Input Terminal.
43	A-MUTE	O	Audio Mute Output Terminal.
44	RDS-DATA	I	RDS Data Input Terminal.
45	NC	—	No Connection.
46	ALM	O	TP OFF Alarm Output Terminal.
47	IF-MUTE	O	IF Mute Output Terminal.
48	$\overline{\text{LPF-SW}}$	O	L.P.F.Time Constant Switching Terminal.
49	NC	—	No Connection.
50	SD	I	Station Detector Signal Input Terminal.
51	$\overline{\text{ST}}$	I	Stereo Signal Input Terminal.
52	PLL-CE	O	Data Communication Control Signal Output Terminal to PLL.
53	PLL-CLK	O	Communication Data Sync Signal Output Terminal to PLL.
54	PLL-D-I	I	Serial Data Signal Input Terminal from PLL.
55	PLL-D-O	O	Serial Data Signal Output Terminal to PLL.
56	NFP-OUT2	O	N.F.P. Time Fader Output Control Terminal.
57	PWR-IC	O	Power IC Stand-by Control Terminal.
58	OUT-REM	O	Out-Remote Output Terminal.
59	$\overline{\text{IN-INT}}$	I	In-Interrupt Input Terminal.
60	$\overline{\text{RESET}}$	I	System Reset Input Terminal.
61	GND	—	GND Terminal.
62	A-HOLD	I	ACC Detection Input Terminal.
63	B-HOLD	I	Battery Detection Input Terminal.
64	RDS-CLK	I	RDS Clock Input Terminal.
65	VOL-CLK	O	Volume Clock Output Terminal.
66	VOL-DATA	O	Volume Data Output Terminal.
67	NFP-OUT 1	O	N.F.P. Time Fader Output Control Terminal.
68	V_{DD}	—	Power Supply Terminal.
69	X2	O	Connection Terminal for System Clock OSC.
70	X1	I	
71	GND	—	GND Terminal.
72	NC	—	No Connection.
73	GND	—	GND Terminal.
74	V_{DD}	—	Power Supply Terminal.
75			

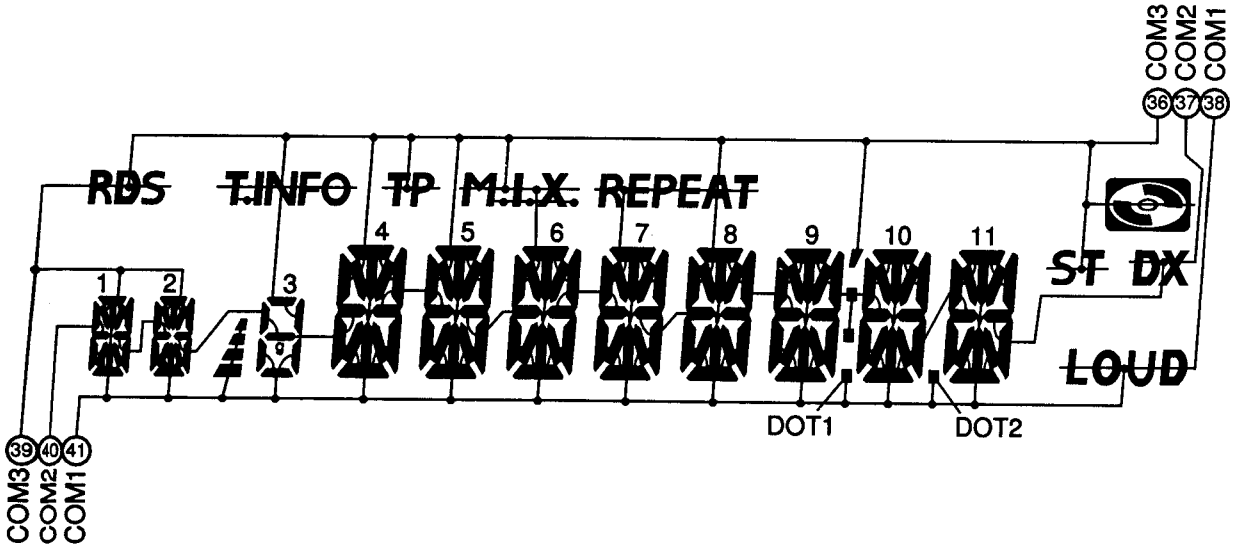
No.	Symbol	I/O	Terminal Description
76	S-METER	I	Signal Meter Input Terminal.
77	M/P	I	Multi Path Detector Terminal.
78	ADJON	I	Adjoining Rejection Detector Terminal.
79	T-SENS	I	Temperature Sensor Input Terminal.
80	NOSE	I	Front Panel Detection Terminal.

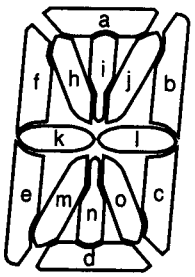
LCD Display

SEGMENT



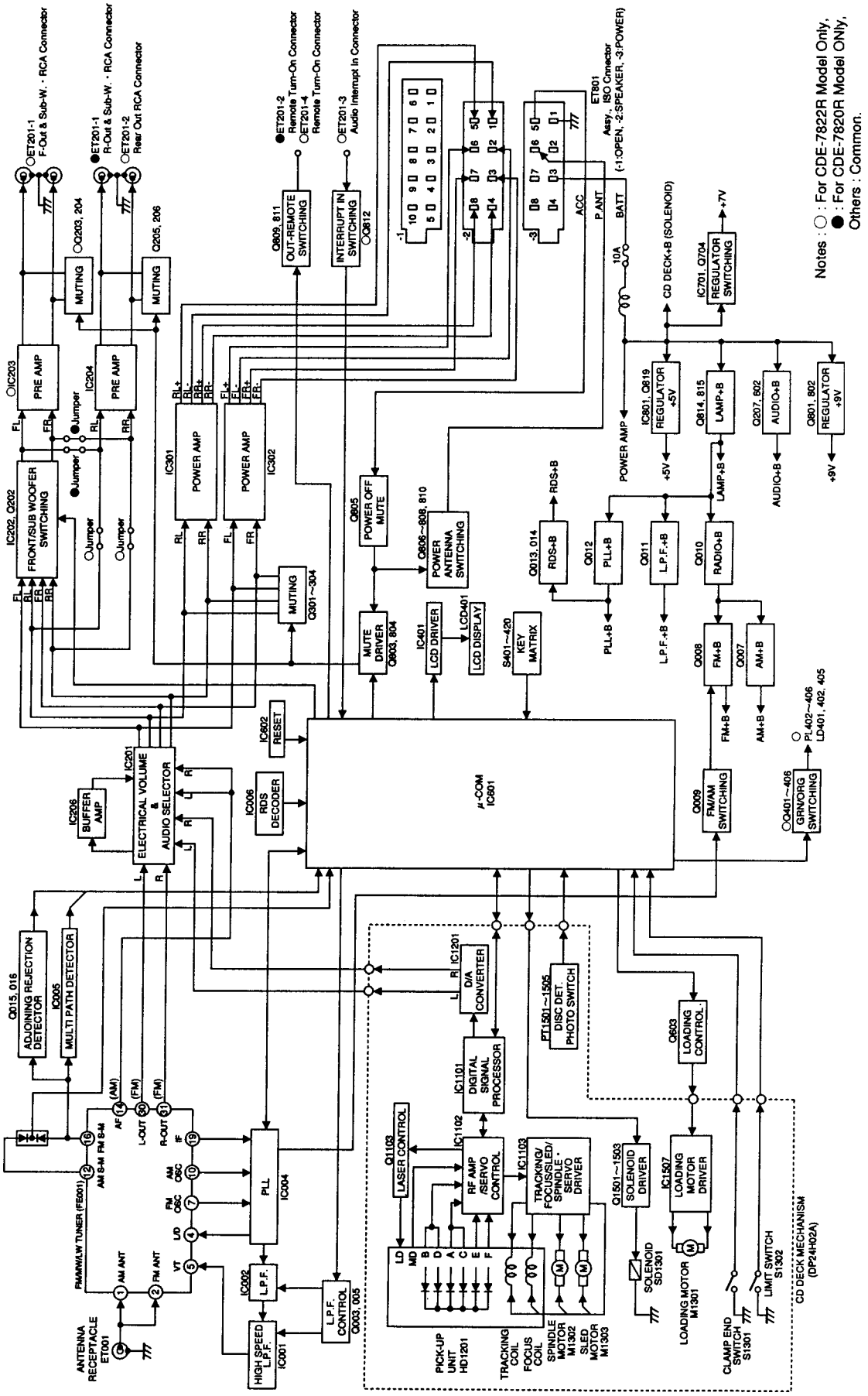
COMMON



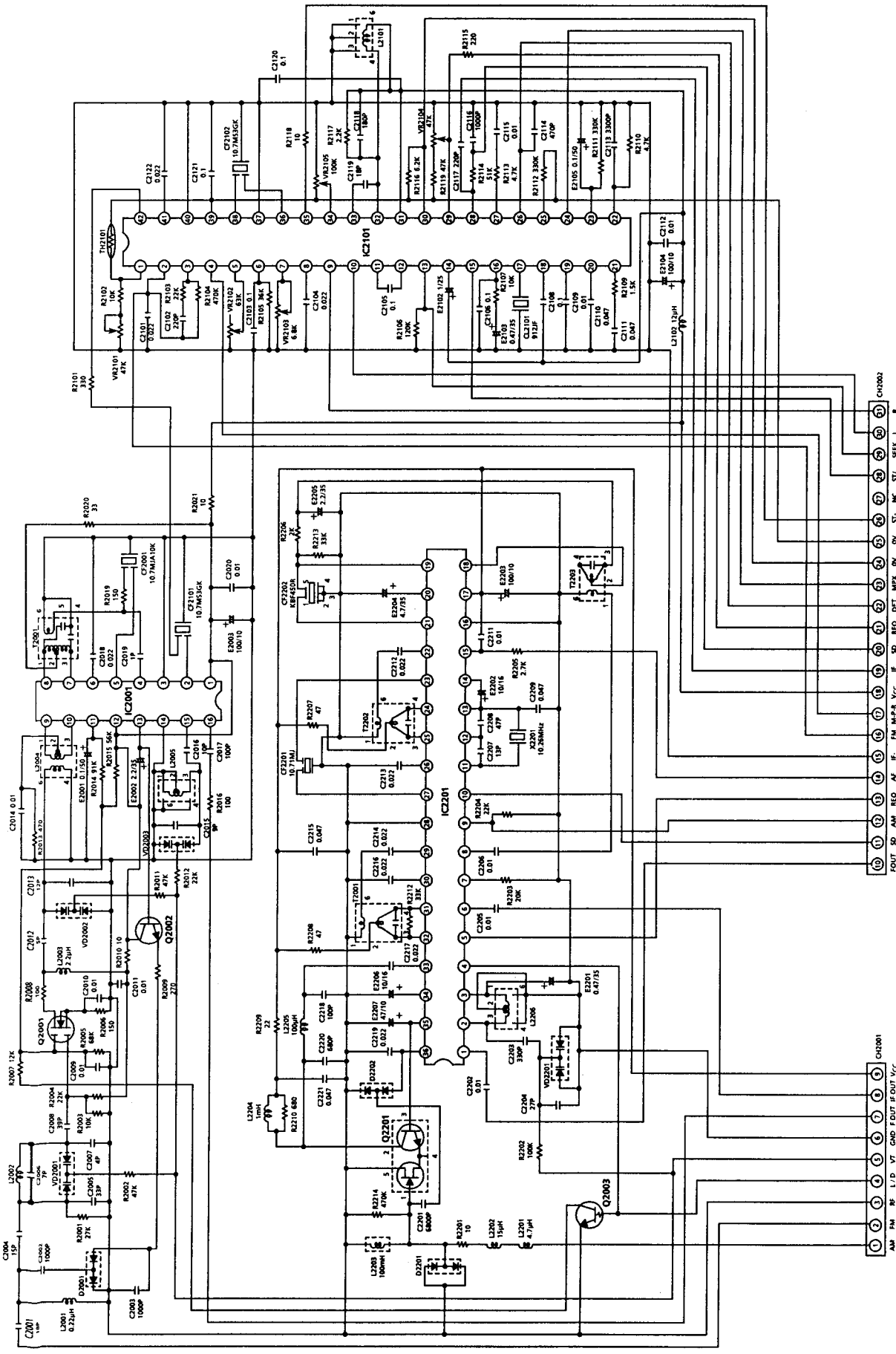


PIN No.	COM1	COM2	COM3	PIN No.	COM1	COM2	COM3
1	1-e	1-f	RDS	44	3-d	3-g	3-a
2	1-m	1-k	1-h	45	3-c	3-f	3-b
3	1-d	1-i, 1-n	1-a	46		4-e	4-f
4	1-o	1-l	1-j	47	4-m	4-k	4-h
5	2-e	2-f	T.INFO	48	4-d	4-i, 4-n	4-a
6	2-m	2-k	2-h	49	4-o	4-l	4-j
7	2-d	2-i, 2-n	2-a	50	5-m	5-k	5-h
8	2-o	2-l	2-j	51	5-d	5-i, 5-n	5-a
9	4-c	4-b	TP	52	5-o	5-l	5-j
10	5-e	5-f	5-b	53	6-m	6-k	6-h
11～24	NC	NC	NC	54	6-d	6-i, 6-n	6-a
25	6-e	5-c	6-f	55	6-o	6-l	6-j
26	6-c	6-b	M.I.X.	56	7-m	7-k	7-h
27	7-e	7-f	7-b	57	7-d	7-i, 7-n	7-a
28	8-e	7-c	8-f	58	7-o	7-l	7-j
29	8-c	8-b	REPEAT	59	8-m	8-k	8-h
30	9-e	9-f		60	8-d	8-i, 8-n	8-a
31	9-c	9-b		61	8-o	8-l	8-j
32	10-e	10-f		62	9-m	9-k	9-h
33	10-o	10-l	10-j	63	9-d	9-i, 9-n	9-a
34	DOT2	10-c	10-b	64	9-o	9-l	9-j
35	11-e	11-f	ST	65	DOT1		
36			COM3	66	10-m	10-k	10-h
37		COM2		67	10-d	10-i, 10-n	10-a
38	COM1			68	11-m	11-k	11-h
39			COM3	69	11-d	11-i, 11-n	11-a
40		COM2		70	11-o	11-l	11-j
41	COM1			71	LOUD	11-c	11-b
42		1-c	1-b	72		DX	
43	3-e	2-c	2-b	73～76	NC	NC	NC

Block Diagram



Tuner Schematic Diagram

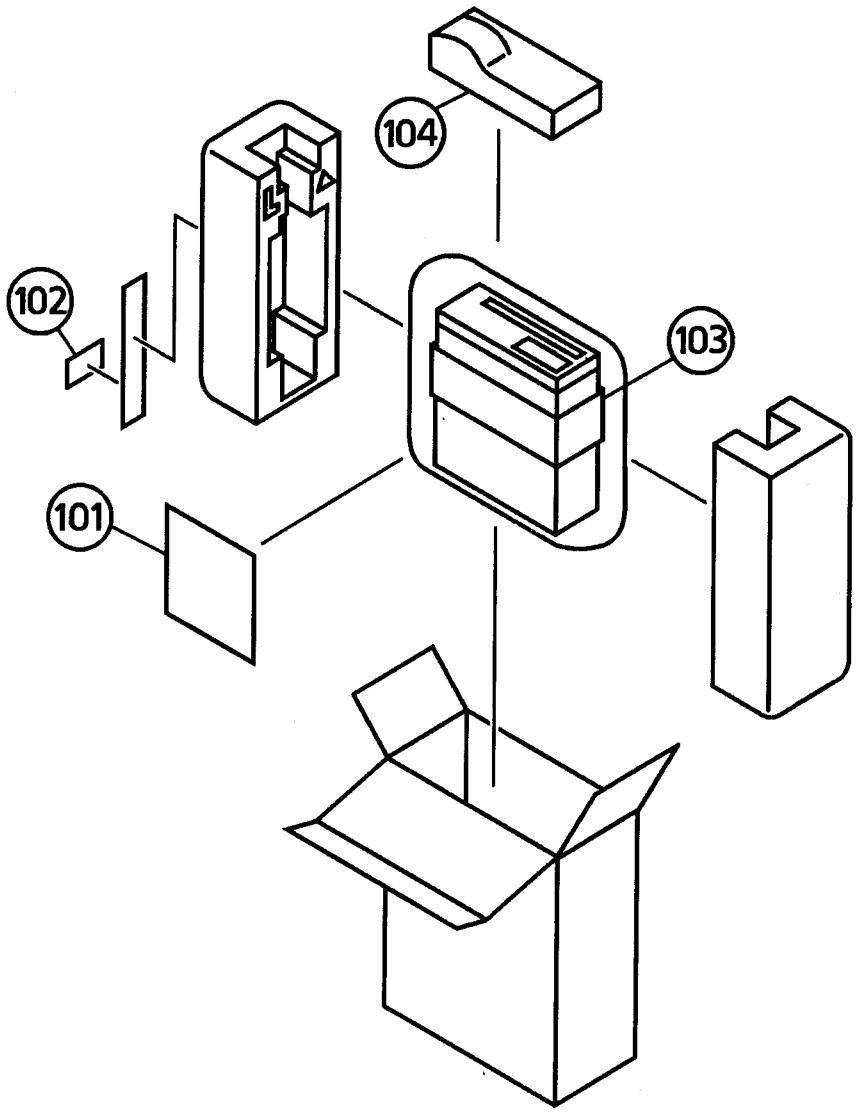


Packing Assembly Parts List

Symbol No.	Part No.	Description
101	68P61329W61	Owner's Manual
102-1	02B47353F01	Nut, Hex. (M5)
102-2	03S72235F13	Screw, Countersink (M5×8)
102-3	46A42363F01	Stud, Bolt
102-4	36A11113W01	Cap, Rubber (A)
102-5	03A11112W01	Bolt, Hex. (M5×25)
102-6	01T75363W01	ISO / JASO Antenna Adapter
103	15D50406W01	Case, Inner
104	15D60773W01	Carrying, Case

Symbol No.	Part No.	Description

Packing Method View



Parts Layout on P.C. Boards and Wiring Diagram (1/2)

1

2

3

4

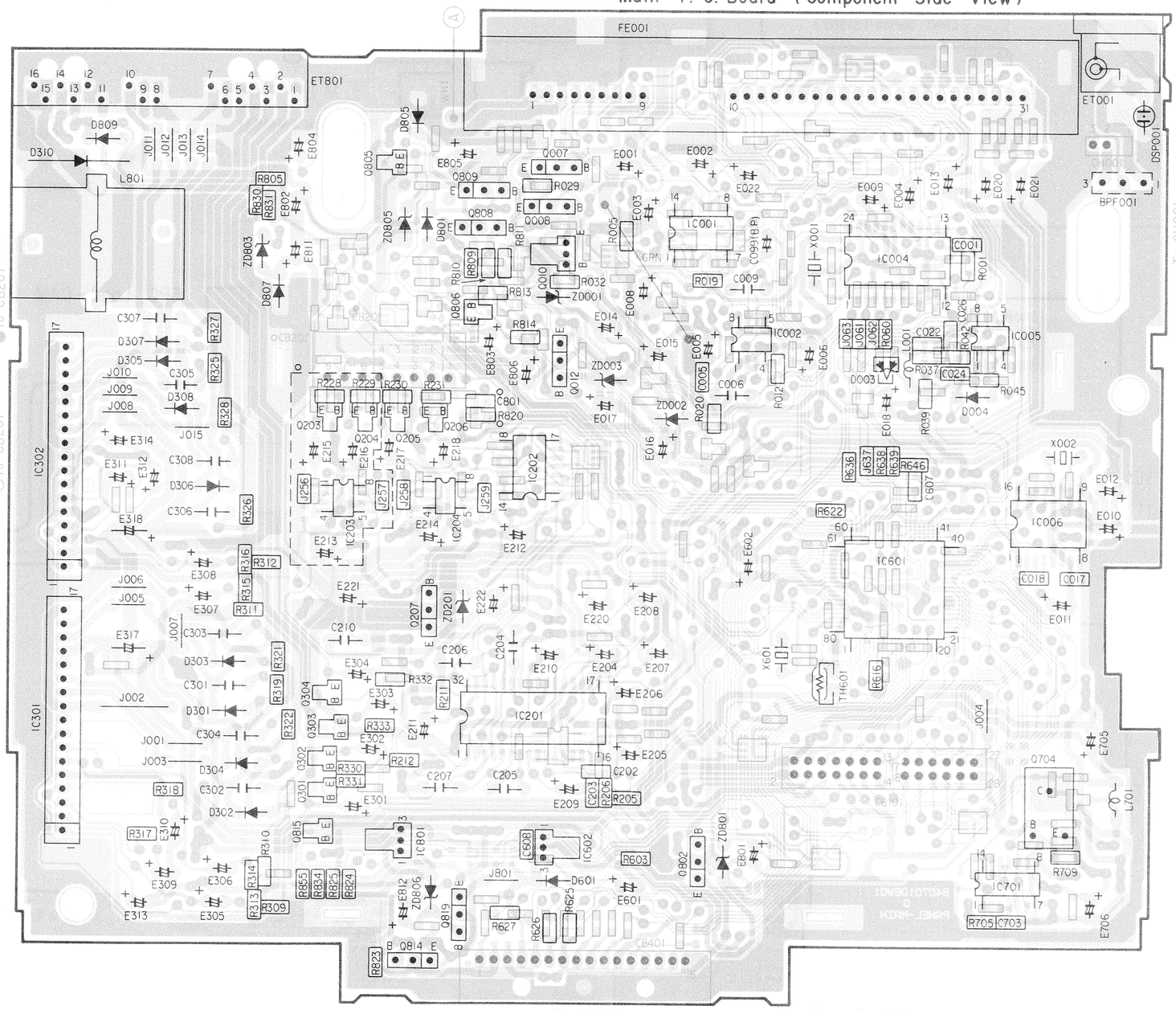
5

●ET201
R-Out / Sub-W. RCA /
Remote Turn-On Connector

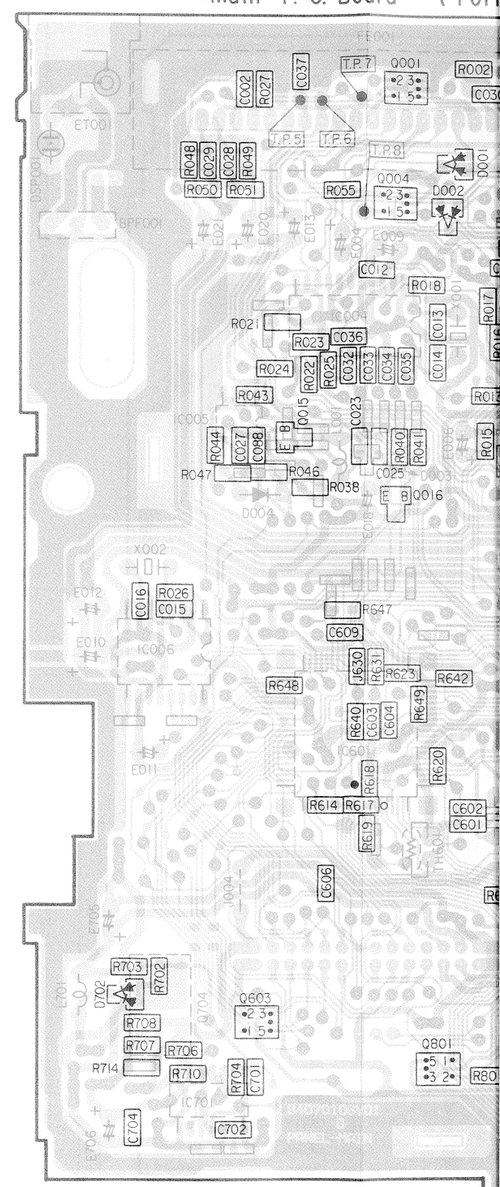
OET201
F-Out / Sub-W. & Rear Out
RCA / Remote Turn-On / Audio
Interrupt In Connector

Notes: ○ : For CDE-7822R Model Only,
● : For CDE-7820R Model Only,
Others : Common

Main P. C. Board (Component Side View)



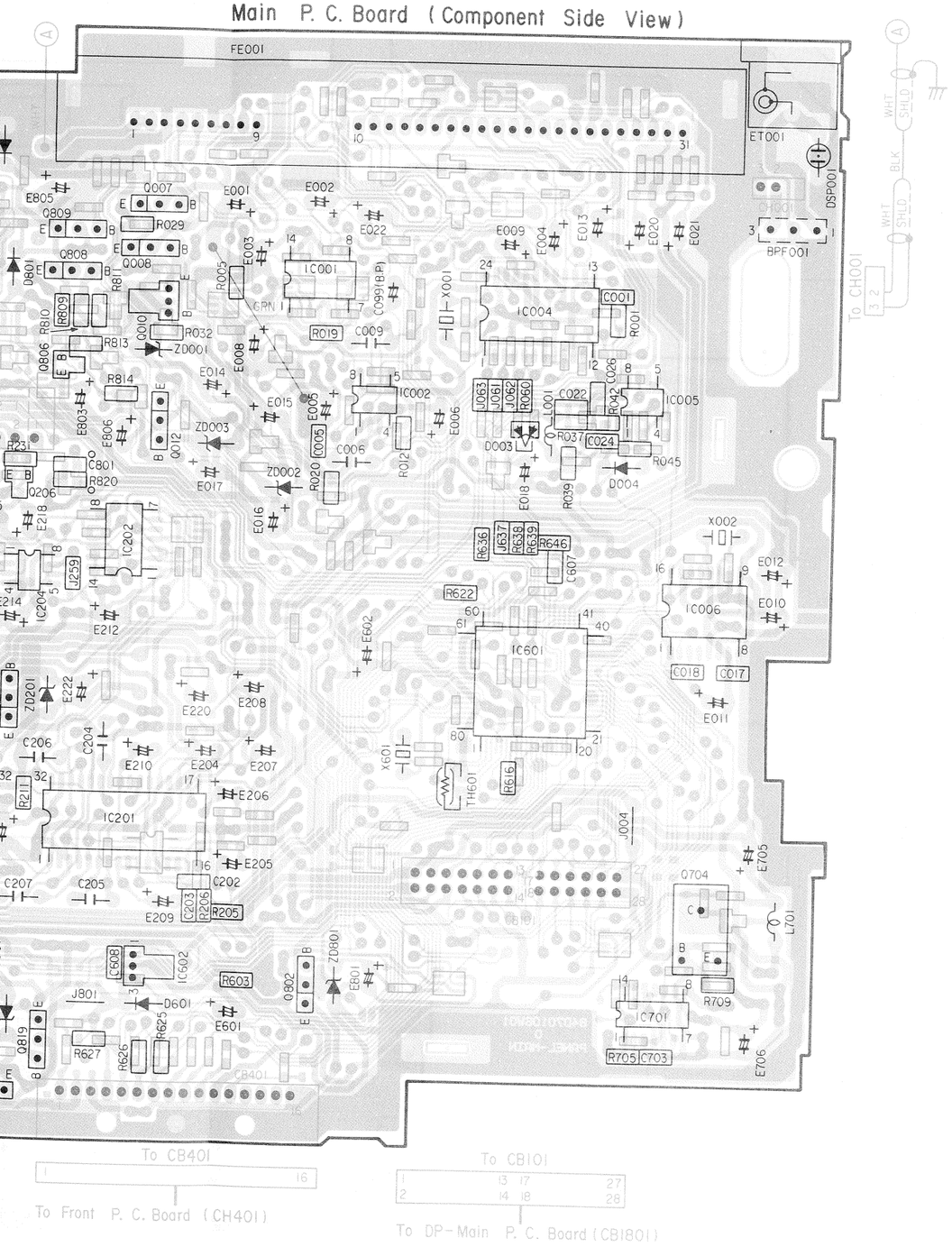
Main P. C. Board (Foil



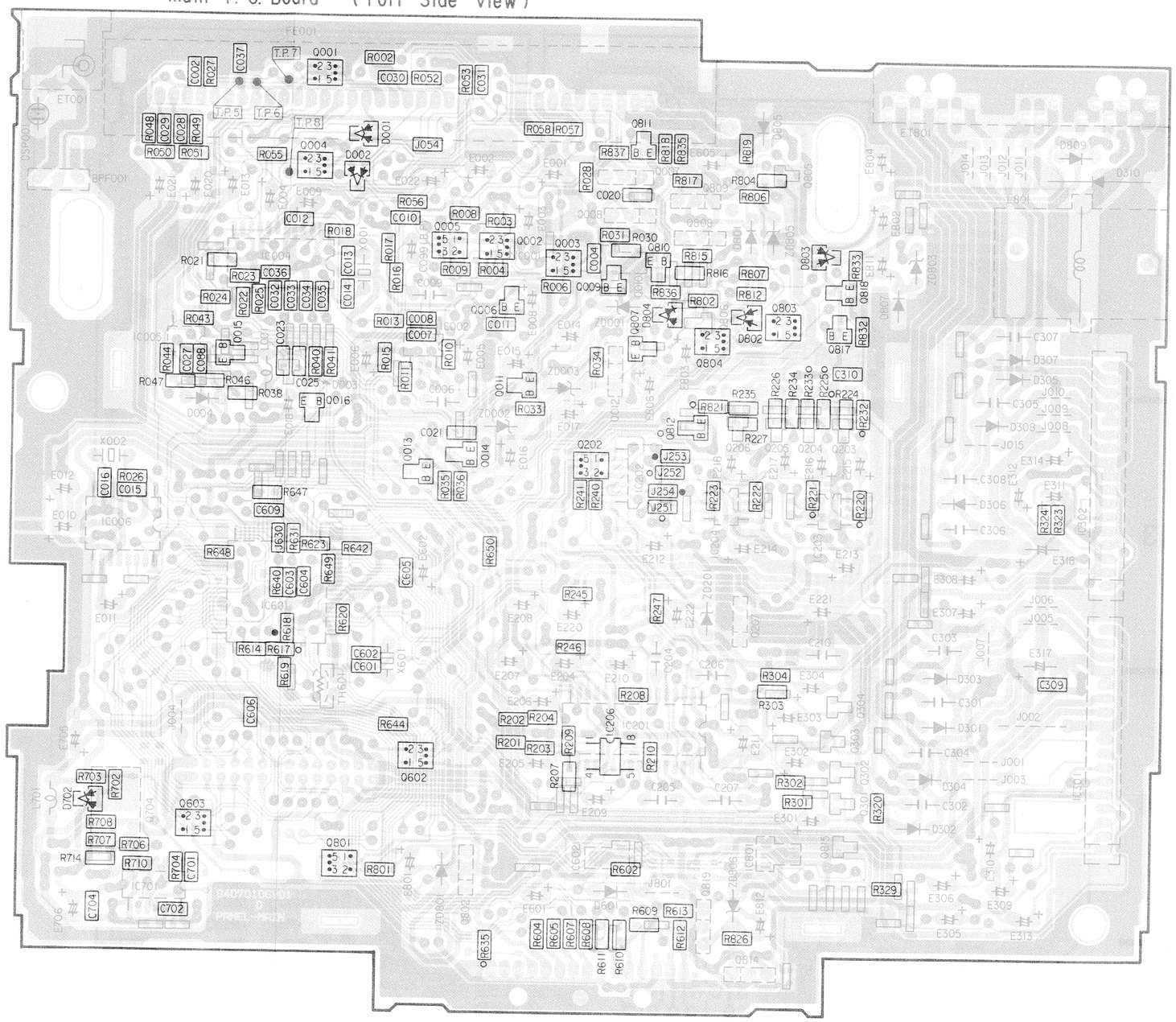
A | B | C | D | E | F | G | H

Diagram (1/2)

Main P. C. Board (Component Side View)



Main P. C. Board (Foil Side View)

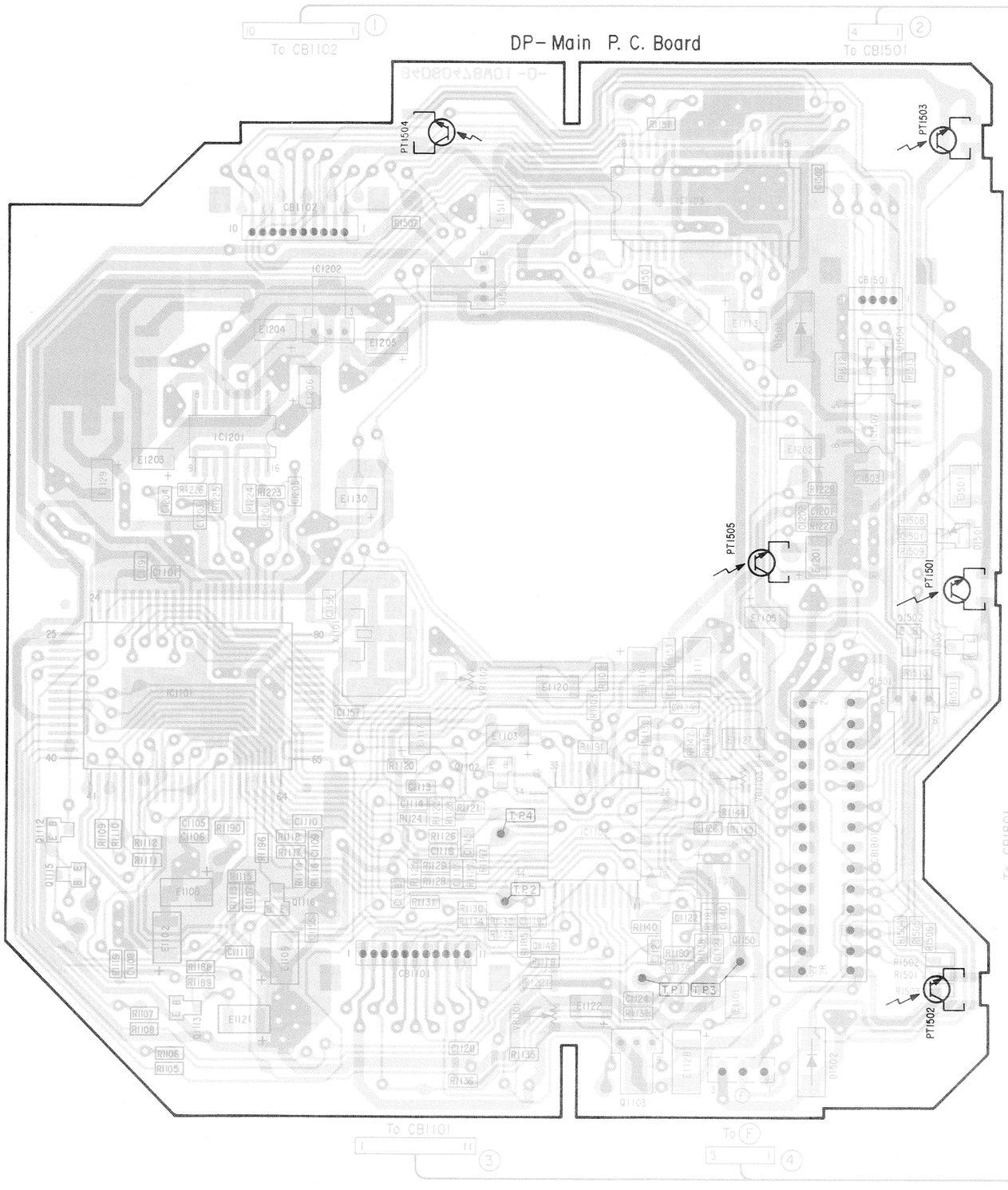


Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

CDE-7822R
CDE-7820R
CDE-7822R
CDE-7820R

Parts Layout on P.C. Boards and Wiring Diagram (2/2)

All P.C. Boards viewed from soldered side.



iagram (2/2)

All P.C. Boards viewed from soldered side.

d

To CB1501

PT1503

PT1505

PT1501

PT1502

To CB1801

From Main P. C. Board (CB101)

To F

Pick-Up Unit (HD1201)

FPC Actuate P. C. Board

Limit Switch (SI302)

Spindle Motor (MI302)

Sled Motor (MI303)

Notes: ○ : For CDE – 7822R Model Only,
● : For CDE – 7820R Model Only,
Others : Common

LED P. C. Board

LDI502

LDI501

LDI503

LDI505

RI551

RI552

To F

Solenoid
(SDI301)

LDI504

FPC Load-CAM P. C. Board

Clamp End Switch
(SI301)

Loading Motor (MI301)

Front P. C. Board

To Main P C Board (CB401)

To CH401

LCD401

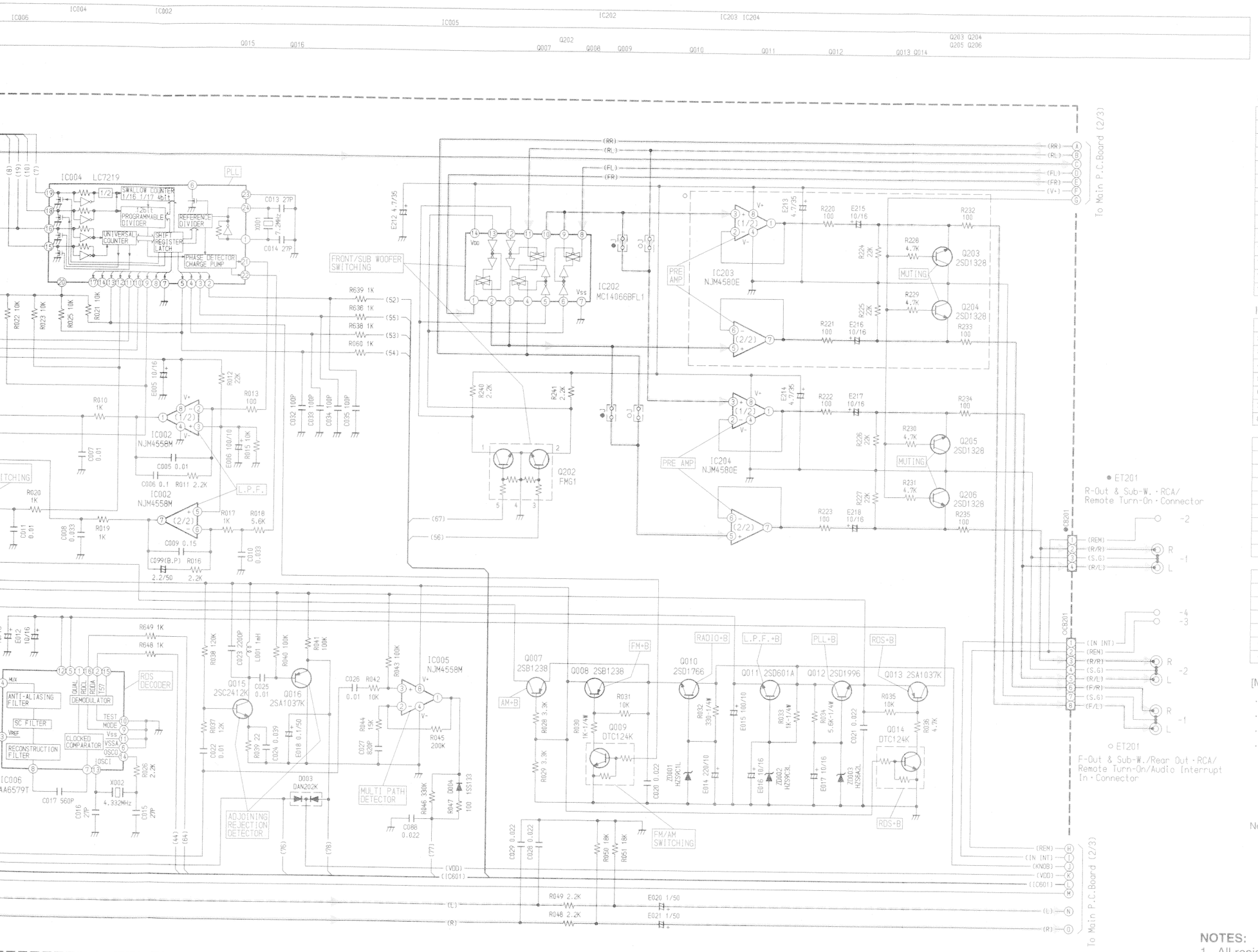
IC401

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Schematic Diagram (1/4)

IC	IC001	IC006	IC004	IC002	IC005	IC202	IC203 IC204
Transistor (Q)	Q001 Q004	Q003 Q002 Q005	Q006	Q015 Q016	Q007 Q202 Q008 Q009 Q010 Q011 Q012 Q013 Q014		Q203 Q204 Q205 Q206

Main P.C.Board (1/3)



IC001

1	8.32V
2	4.15V
3	4.15V
4	4.15V
5	9.07V
6	9.07V
7	0V
8	2.46V
9	2.47V
10	2.11V
11	2.11V
12	9.07V
13	0V
14	9.07V

IC002

1	4.15V
2	2.85V
3	2.84V
4	0V
5	2.84V
6	2.85V
7	8.6V
8	9.09V

IC004

1	2.3V	13	3.61V
2	PS	14	NC
3	PS	15	0V
4	PS	16	0V
5	PS	17	NC
6	NC	18	PS
7	0V	19	PS
8	0V	20	5.02V
9	3.65V	21	2.84V
10	4.09V	22	2.84V
11	0V	23	0V
12	0V	24	2.59V

IC005

1	4.94V
2	4.95V
3	4.9V
4	0V
5	NC
6	NC
7	NC
8	8.94V

IC006

1	NC	9	0V
2	PS	10	0V
3	2.47V	11	0V
4	2.4V	12	4.94V
5	4.93V	13	2.11V
6	0V	14	2.72V
7	2.45V	15	NC
8	2.5V	16	PS

IC202

1	4.48V	8	4.48V
2	4.48V	9	4.48V
3	4.48V	10	4.48V
4	4.48V	11	4.48V
5	0V	12	0V
6	8.88V	13	8.86V
7	0V	14	8.88V

○IC203
IC204

1	4.48V
2	4.48V
3	4.48V
4	0V
5	4.48V
6	4.48V
7	4.48V
8	8.86V

	E	C	B		E	C	B
Q006	0V	0.9V	0V	Q014	0V	0V	8.99V
Q007	9.02V	8.95V	8.3V	Q015	0.3V	8.62V	0.97V
Q008	9.02V	8.96V	8.32V	Q016	4.92V	0V	4.92V
Q009	0V	3.61V	0V	○ Q203	0.03V	0.01V	0.72V
Q010	9.02V	14.08V	9.52V	○ Q204	0.03V	0.01V	0.72V
Q011	9.08V	14.08V	9.71V	Q205	0.03V	0.01V	0.72V
Q012	4.96V	14.08V	5.51V	Q206	0.03V	0.01V	0.72V
Q013	4.96V	4.93V	4.28V				

	1	2	3	4	5
Q001	0V	0V	4.53V	0V	4.53V
Q002	0V	9.06V	0V	0V	4.82V
Q003	0V	9.07V	0V	0V	3.64V
Q004	6.44V	0V	6.44V	0V	0V
Q005	9.07V	0V	4.82V	0V	0V
Q202	8.88V	8.88V	5.23V	0V	5.23V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : CD : Be Playing back the 2nd. Music of the Test CD (YEDS-18)
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

Notes : ○ : For CDE-7822R Model Only,
● : For CDE-7820R Model Only,
Others : Common.

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

CDE-7822R
CDE-7820R

Schematic Diagram (2/4)

IC	IC601			IC602	IC701	IC206	IC201	IC801	
Transistor (Q)	Q602	Q812						Q803	Q804
	Q603	Q704				Q818	Q207 Q817 Q814 Q815	Q805 Q807 Q819	Q810 Q808 Q802 Q805 Q809 Q811 Q801

Main P.C.Board (2/3)

To Main P.C.Board (1/3)

From DP-Main P.C.Board (CB1801)

From Front P.C.Board (CH401)

IC601 75099W03 μ-COM

IC602 S-8052HNM-CR

IC701 BA9700AF

IC206 NJM4580E

IC201 TEA6320T

IC801 S-8054ALR-LN

ELECTRICAL VOLUME & AUDIO SELECTOR

INTERRUPT IN SWITCHING

POWER ANTENNA SWITCHING

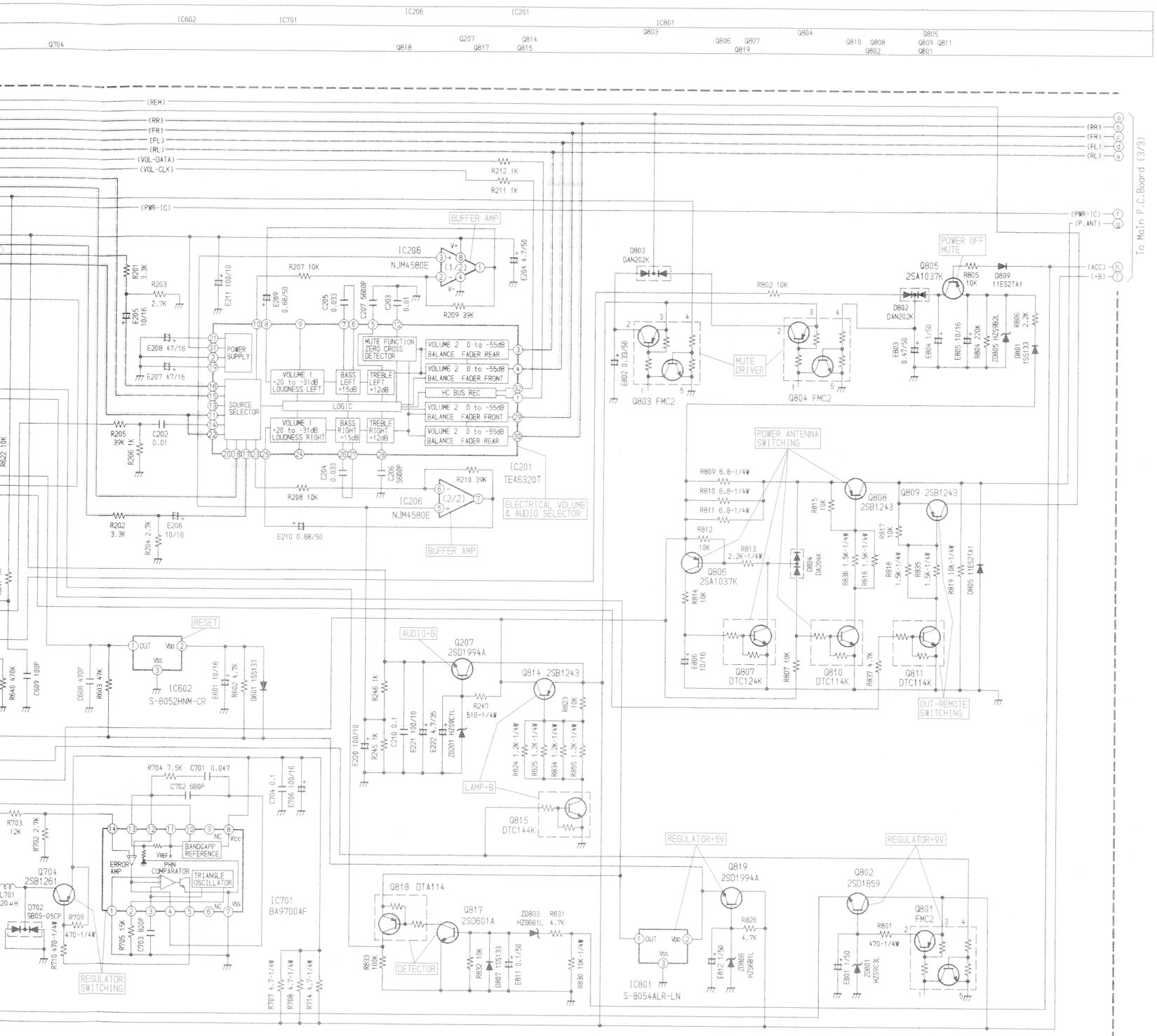
OUT-REMOTE SWITCHING

REGULATOR SWITCHING

LOADING CONTROL

MUTE DRIVER

POWER OFF MUTE



IC201

1	4.75V	17	4.45V
2	0V	18	4.45V
3	4.44V	19	8.76V
4	4.45V	20	NC
5	4.46V	21	4.46V
6	4.46V	22	4.45V
7	4.45V	23	4.47V
8	4.4V	24	NC
9	NC	25	4.46V
10	4.45V	26	4.4V
11	4.45V	27	4.47V
12	8.78V	28	4.47V
13	NC	29	4.46V
14	4.45V	30	4.42V
15	4.45V	31	8.86V
16	4.45V	32	5.24V

IC206

1	4.31V
2	4.45V
3	4.44V
4	0V
5	4.45V
6	4.45V
7	4.33V
8	8.85V

IC602

1	5.19V
2	5.2V
3	0V

IC801

1	4.8V
2	5.19V
3	0V

IC601

1	5.17V	21	NC	41	PS	61	0V
2	5.17V	22	NC	42	5.05V	62	4.81V
3	5.17V	23	5.24V	43	0V	63	4.82V
4	0V	24	0V	44	PS	64	PS
5	0V	25	0V	45	NC	65	5.23V
6	4.72V	26	0V	46	0V	66	4.77V
7	5.2V	27	0V	47	0V	67	5.22V
8	5.18V	28	0V	48	5.18V	68	5.23V
9	NC	29	0V	49	NC	69	PS
10	5.22V	30	0V	50	0V	70	PS
11	5.24V	31	0V	51	5.2V	71	0V
12	PS	32	5.19V	52	PS	72	NC
13	PS	33	0V	53	PS	73	0V
14	PS	34	5.06V	54	PS	74	7.23V
15	NC	35	0V/5.6V	55	PS	75	7.23V
16	NC	36	PS	56	0V	76	4.84V
17	NC	37	PS	57	5.22V	77	4.76V
18	4.78V	38	PS	58	5.22V	78	4.88V
19	5.18V	39	PS	59	4.81V	79	5.05V
20	NC	40	PS	60	5.22V	80	2.13V

MODE : 35Pin : DISC IN/DISC OUT

	E	C	B
Q207	8.94V	14.3V	9.54V
Q704	13.99V	7.54V	13.59V
Q802	9.12V	14.27V	9.72V
Q805	8.88V	0V	8.35V
Q806	14.12V	0V	14.11V
Q807	0V	14.1V	0V
Q808	14.01V	14.03V	13.38V
Q809	14.03V	14.03V	13.37V
Q810	0V	0V	7.02V
Q811	0V	0V	3.72V
○ Q812	0V	4.29V	0V
Q814	14.26V	14.18V	13.51V
Q815	0V	3.48V	5.2V
Q817	0V	0V	0.7V
Q818	4.81V	4.8V	0V
Q819	5.19V	14.26V	5.79V

	1	2	3	4	5
Q602	0V	8.91V	9V	5.21V	0V
Q603	NC	5V	5.23V	5.2V	0V
Q801	NC	14.25V	14.29V	5.17V	0V
Q803	NC	0V	14.28V	0V	0V
Q804	NC	14.14V	14.26V	3.49V	0V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : CD : Be Playing back the 2nd. Music of the Test CD (YEDS-18)
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

Notes : ○ : For CDE-7822R Model Only,
● : For CDE-7820R Model Only,
Others : Common.

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (3/4)

IC	IC301 IC302	IC401
Transistor (Q)	Q301 Q302 Q303 Q304	Q403 Q402 Q401 Q404 Q405 Q406

Main P.C.Board (3/3)

To Main P.C.Board (2/3)

(+B)
(RL)
(RR)
(PWR-IC)
(FL)
(FR)
(ACC)
(P.ANT)

C310 1000P
E317 220U/16
C309 0.1
D310 DSA3A4

IC301
TA8215L
POWER AMP
Power Power
Vcc1 Vcc2
PRE-AMP
PRE-GND
FLAT AMP
PROTECTOR
LOAD DUMP
THERMAL SHUT DOWN
SHORT CIRCUIT
Mute SW
Stand-By SW
Ripple
GND

R301 220
E301 10/16
R309 1.5K
E305 1/50
R331 4.7K
Q301 2SD1328
R313 1K
R302 220
E302 10/16
R310 1.5K
E306 1/50
R330 4.7K
Q302 2SD1328
R314 1K
E309 10/16
R317 1.5K
E310 10/16
R318 1.5K

C304 0.15
C302 0.15
C303 0.15
C301 0.15
R322 2.2
R320 2.2
R321 2.2
R319 2.2
D304 1ES2TA1
D302 1ES2TA1
D303 1ES2TA1
D301 1ES2TA1
E313 220/10

Q301~304
MUTING

R329 10K

E318 2200/16

IC302
TA8215L
POWER AMP

R303 220
E303 10/16
R311 1.5K
E307 1/50
R333 4.7K
Q303 2SD1328
R315 1K
R304 220
E304 10/16
R312 1.5K
E308 1/50
R332 4.7K
Q304 2SD1328
R316 1K
E311 10/16
R323 1.5K
E312 10/16
R324 1.5K

C308 0.15
C306 0.15
C307 0.15
C305 0.15
R328 2.2
R326 2.2
R327 2.2
R325 2.2
D308 1ES2TA1
D306 1ES2TA1
D307 1ES2TA1
D305 1ES2TA1
E314 220/10

L801 CHOKE COIL

ET801 Assy.,ISO Connector
(-1:OPEN,-2:SPEAKER,-3:POWER)
10A

(REAR R+)
(FRONT R+)
(FRONT L+)
(REAR L+)
(P.ANT)
(ACC)
(GND)
(BAT)
(REAR L-)
(FRONT L-)
(FRONT R-)
(REAR R-)

Front P.C.Board

To Main P.C.Board (CB401)

CH401
NOSE
KNOB
LCD
KEY-1
KEY-2
KEY-3
LCD-DATA
LCD-CLK
LCD-CE
GND
AMBER
NC
GND

R404 10K
R403 10K
R402 10K
R401 10K
R460 1K
R452 1K
R453 1K
R454 1K
OR405 10K
D401 DA204K
D402 DA204K
D403 DA204K
D404 DA204K
D405 DA204K
R406 8.2K
R408 2.2K
R455 120K
C401 470P

Q403 DTC124K
R411 20-1/4W
R409 8.2-1/4W
PL402 9V-85mA
PL401 9V-85mA
Q401 2SC2411K
R413 4.7K-1/4W
R415 4.7K-1/4W
Q402 2SC2411K
R416 2.2K-1/4W
Q404 2SC2411K
R456 4.7K-1/4W
Q405 2SC2411K
R417 2.7K-1/4W
Q406 2SC2411K

R419 100-1/4W
R420 100-1/4W
R421 100-1/4W
R422 100-1/4W
R429 100-1/4W
R430 100-1/4W
R431 100-1/4W
R432 100-1/4W
R426 620-1/4W
R412 620-1/4W
R410 620-1/4W
R433 620-1/4W
PL403 6V-80mA
PL404 6V-80mA
PL405 6V-80mA
PL406 6V-80mA
PL407 6V-80mA
PL408 6V-80mA
PL409 6V-80mA
PL410 6V-80mA
PL411 6V-80mA

Q401~406
GRN/ORG SWITCHING

R407 5.6K
E401 10/6.3
C402 0.022

OLD405 SML-020PDTT
OLD401 SML-020PDTT
OLD406 SML-010PTT
OLD403 SML-010PTT

LCD DRIVER
IC401
LC75850W
COMMON DRIVER
ADDRESS DETECTOR
CLOCK GENERATOR
SHIFT REGISTER
LATCH & DRIVER

S408,409,411,414,415,418~420
:SKQNAC
S401~407,412,413,416
:SKQMAJ
S410,417
:SKQAXX

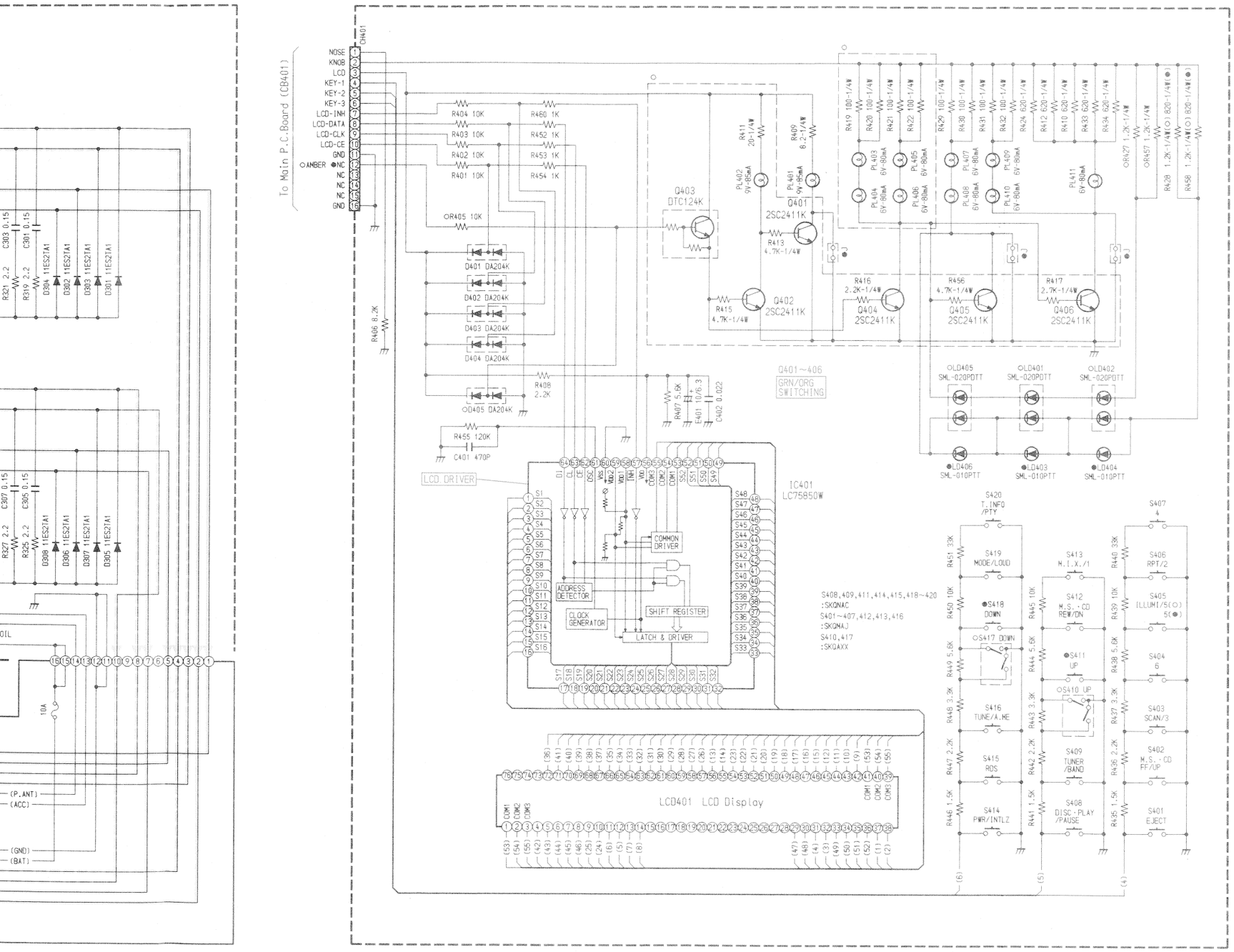
LCD401 LCD Display

S420 T.INFO /PTY
S419 MODE/LOUD
S418 DOWN
S417 DOWN
S416 TUNE/A.ME
S415 RDS
S414 PWR/INTLZ
S413 M.I.X./1
S412 M.S.-CD REW/DN
S411 UP
S410 UP
S409 TUNER /BAND
S408 DISC-PLAY /PAUSE

R451 33K
R450 10K
R449 5.6K
R448 3.3K
R447 2.2K
R446 1.5K
R445 10K
R444 5.6K
R443 3.3K
R442 2.2K
R441 1.5K

	IC401			
Q403	Q402 Q401	Q404	Q405	Q406

Front P.C.Board



IC301, IC302

1	4.99V	10	14.27V
2	4.92V	11	PS
3	4.99V	12	PS
4	3.51V	13	0V
5	0V	14	0V
6	4.99V	15	PS
7	4.99V	16	PS
8	4.99V	17	14.27V
9	14.27V		

	E	C	B
Q301	0.03V	0.01V	0.72V
Q302	0.03V	0.01V	0.72V
Q303	0.03V	0.01V	0.72V
Q304	0.03V	0.01V	0.72V
○ Q401	0V	9.04V	0.27V
○ Q402	0V	0.27V	0.79V
○ Q403	3.4V	9.15V	4.74V
○ Q404	0V	0.3V	0.81V
○ Q405	0V	13.67V	0.32V
○ Q406	0V	13.67V	0.33V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : CD : Be Playing back the 2nd. Music of the Test CD (YEDS-18)
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

Notes : ○ : For CDE-7822R Model Only,
● : For CDE-7820R Model Only,
Others : Common.

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

CDE-7822R
CDE-7820R
CDE-7822R
CDE-7820R

Schematic Diagram (4/4)

IC	IC1103	IC1507	IC1102	IC1201	IC1101	IC1202
Transistor (Q,PT)	PT1501 PT1502 PT1503 PT1504 PT1505 Q1103	Q1502 Q1501 Q1503	Q1508	Q1102 Q1112 Q1115 Q1113		Q1116

LED P.C.Board

DP-Main P.C.Board

Pick Up Unit (HD1201)

IC1101 TC9284AF
DIGITAL SIGNAL PROCESSOR

IC1102 TA8191F
RF AMP/SERVO CONTROL

IC1103 BA6790FP
TRACKING/FOCUS/SLED/SPINDLE SERVO DRIVER

IC1507 BA6287F
LOADING MOTOR DRIVER

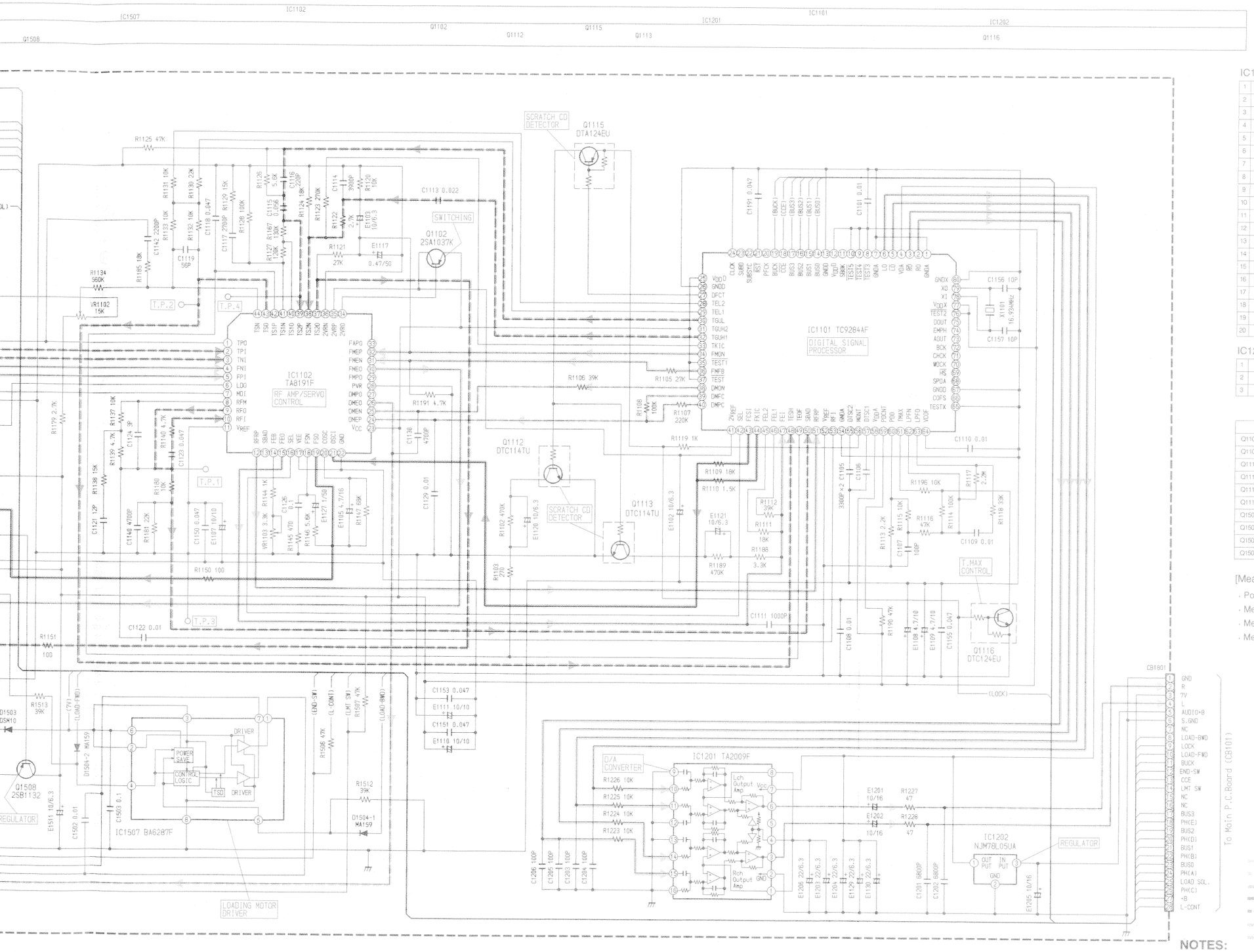
IC1201 TA2009F
D/A CONVERTER

IC1202 NJM78L05

Q1501 2SB1188
Q1502 DTC124EU
Q1503 2SD1383K
Q1508 2SB1132
Q1115 DTA124EU
Q1102 2SA1037K
Q1112 DTC114TU
Q1113 DTC114TU
Q1116 DTC124EU

M1303 SLED MOTOR
M1302 SPINDLE MOTOR
M1301 LOADING MOTOR
S1302 LIMIT SW
S1301 CAM END SW

SCRATCH CD DETECTOR
SWITCHING
DISC IN DETECTOR
EJECT END DETECTOR
8/12cm DISCRIMINATE DETECTOR
8cm DISC END DETECTOR
RELOAD DETECTOR
SOLENOID DRIVER
LASER CONTROL
REGULATOR
T.MAX CONTROL



IC1101

1	0V	21	5V	41	4.3V	61	2.2V
2	2.4V	22	PS	42	5V	62	2.2V
3	2.6V	23	PS	43	2.6V	63	2.2V
4	5V	24	0V	44	2.6V	64	2.1V
5	2.6V	25	5V	45	2.2V	65	0V
6	2.4V	26	0V	46	2.2V	66	PS
7	0V	27	5V	47	2.2V	67	0V
8	5V	28	2.2V	48	2.2V	68	0.1V
9	5V	29	2.2V	49	2.2V	69	5V
10	5V	30	2.2V	50	2.5V	70	PS
11	PS	31	0V	51	2.4V	71	PS
12	5V	32	2.2V	52	2.2V	72	PS
13	0V	33	2.2V	53	PS	73	PS
14	PS	34	2.2V	54	0V	74	0.1V
15	PS	35	5V	55	2.6V	75	0.1V
16	PS	36	2.2V	56	5V	76	5V
17	PS	37	5V	57	2.6V	77	5V
18	PS	38	2.2V	58	5V	78	PS
19	PS	39	PS	59	5V	79	PS
20	PS	40	PS	60	PS	80	0V

IC1102

1	1.7V	23	5V
2	2V	24	PS
3	2V	25	2.1V
4	2V	26	PS
5	2V	27	PS
6	3.9V	28	2.1V
7	0.1V	29	2.1V
8	2.1V	30	2V
9	PS	31	2V
10	PS	32	2.1V
11	2.1V	33	PS
12	PS	34	4.4V
13	2.7V	35	4.3V
14	2V	36	2.1V
15	PS	37	PS
16	4.9V	38	2V
17	0V	39	2V
18	PS	40	PS
19	PS	41	2V
20	PS	42	2.1V
21	2.4V	43	2.1V
22	0V	44	2.1V

IC1103

1	2.8V	15	5.8V
2	3V	16	2.1V
3	2.2V	17	3.1V
4	2.2V	18	2.6V
5	5.6V	19	2V
6	5.1V	20	2.2V
7	6.3V	21	6.2V
8	0V	22	6.2V
9	2.2V	23	2.1V
10	2.4V	24	2.2V
11	3.2V	25	2.1V
12	2.6V	26	2.7V
13	0V	27	3V
14	5.8V	28	0V

IC1201

1	2.5V	9	0V
2	0V	10	2.4V
3	2.5V	11	2.6V
4	2.5V	12	0V
5	NC	13	0V
6	2.5V	14	2.6V
7	5V	15	2.4V
8	2.5V	16	0V

IC1202

1	9V
2	0V
3	5V

IC1507

1	0V	5	0V
2	7.1V	6	7.1V
3	7.1V	7	0V
4	0V	8	0V

	E	C	B
Q1102	5V	4.5V	4.3V
Q1103	4.6V	4V	1.8V
Q1112	2.2V	0V	2.2V
Q1113	2.2V	0V	2.2V
Q1115	5V	5V	0V
Q1116	2.1V	5V	2.1V
Q1501	14V	14V	0V
Q1502	0V	0V	14V
Q1503	0V	0V	0V
Q1508	6.3V	5.6V	5.1V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : CD : Be Playing back the 2nd. Music of the Test CD (YEDS-18)
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

R-ch Signal Line
L-ch Signal Line
CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Sled Servo Signal Line
Spindle Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES.=	Resistor	CAP.=	Capacitor
C.F.=	Carbon Film	ELY.=	Electrolytic
M.F.=	Metal Film	CER.=	Ceramic
M.O.=	Metal Oxide Film	MYL.=	Mylar
M.P.=	Metal Plate	TAN.=	Tantalum
TR.=	Transistor	POLY.=	Polystyrol
TRANS.=	Transformer	PP.=	Polypropylene
CP.=	Chip	PLT.=	Polyethylene
		PF.=	Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
	IC001	51T40941U03	MC14066BFL1
	IC002	51T93336F01	NJM4558M
	IC004	51T35504W02	LC7219
	IC005	51T93336F01	NJM4558M
	IC006	51T55054W02	SAA6579T
	IC201	51T65131W01	TEA6320T
	IC202	51T40941U03	MC14066BFL1
○	IC203	51T25576W04	NJM4580E
	IC204	51T25576W04	NJM4580E
	IC206	51T25576W04	NJM4580E
	IC301	51T35133W01	TA8215L
	IC302	51T35133W01	TA8215L
	IC601	51T75099W03	75099W03
	IC602	51T95014F13	S-8052HNM-CR
	IC701	51T35436W02	BA9700AF
	IC801	51T95014F09	S-8054ALR-LN

Transistors

Symbol No.	Part No.	Description
	Q001	48T73888F08	CP., FMG1
	Q002	48T73888F08	CP., FMG1
	Q003	48T73888F08	CP., FMG1
	Q004	48T73888F08	CP., FMG1
	Q005	48T73888F08	CP., FMG1
	Q006	48T62967F03	CP., DTC124K
	Q007	48T84234F03	2SB1238
	Q008	48T84234F03	2SB1238
	Q009	48T62967F03	CP., DTC124K
	Q010	48T80615F01	CP., 2SD1766
	Q011	48T52438F01	CP., 2SD601A
	Q012	48T90183F01	2SD1996
	Q013	48T63420F01	CP., 2SA1037K
	Q014	48T62967F03	CP., DTC124K
	Q015	48T63417F01	CP., 2SC2412K
	Q016	48T63420F01	CP., 2SA1037K
	Q202	48T73888F08	CP., FMG1
○	Q203	48T63788F01	CP., 2SD1328
○	Q204	48T63788F01	CP., 2SD1328
	Q205	48T63788F01	CP., 2SD1328
	Q206	48T63788F01	CP., 2SD1328
	Q207	48T93828F04	2SD1994A
	Q301	48T63788F01	CP., 2SD1328
	Q302	48T63788F01	CP., 2SD1328
	Q303	48T63788F01	CP., 2SD1328
	Q304	48T63788F01	CP., 2SD1328
	Q602	48T73888F11	CP., FMC1
	Q603	48T73888F12	CP., FMC2
	Q704	48T15511W02	CP., 2SB1261
	Q801	48T73888F12	CP., FMC2
	Q802	48T83835F03	2SD1859
	Q803	48T73888F12	CP., FMC2
	Q804	48T73888F12	CP., FMC2
	Q805	48T63420F01	CP., 2SA1037K
	Q806	48T63420F01	CP., 2SA1037K
	Q807	48T62967F03	CP., DTC124K
	Q808	48T84366F01	2SB1243
	Q809	48T84366F01	2SB1243
	Q810	48T62967F02	CP., DTC114K
	Q811	48T62967F02	CP., DTC114K
○	Q812	48T52438F01	CP., 2SD601A
	Q814	48T84366F01	2SB1243
	Q815	48T62967F04	CP., DTC144K
	Q817	48T52438F01	CP., 2SD601A
	Q818	48T62966F02	CP., DTA114
	Q819	48T93828F04	2SD1994A

Diodes / Surge Protector

Symbol No.	Part No.	Description
	D001	48T63462F01	CP., DAN202K
	D002	48T63462F01	CP., DAN202K
	D003	48T63462F01	CP., DAN202K
	D004	48T68828F01	1SS133
	D301	48T84052F01	11ES2TA1
	D302	48T84052F01	11ES2TA1
	D303	48T84052F01	11ES2TA1
	D304	48T84052F01	11ES2TA1
	D305	48T84052F01	11ES2TA1
	D306	48T84052F01	11ES2TA1
	D307	48T84052F01	11ES2TA1
	D308	48T84052F01	11ES2TA1

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

Symbol No.	Part No.	Description
D310	48T68580F02	DSA3A4
D601	48T68828F01	1SS133
D702	48T15702W01	CP., SB05-05CP
D801	48T68828F01	1SS133
D802	48T63462F01	CP., DAN202K
D803	48T63462F01	CP., DAN202K
D804	48T64134F01	CP., DA204K
D805	48T84052F01	11ES2TA1
D807	48T68828F01	1SS133
D809	48T84052F01	11ES2TA1
ZD001	48T83128F25	Zener, HZS9C1L
ZD002	48T83128F27	Zener, HZS9C3L
ZD003	48T83128F02	Zener, HZS6A2L
ZD201	48T83128F25	Zener, HZS9C1L
ZD801	48T83128F27	Zener, HZS9C3L
ZD803	48T83128F04	Zener, HZS6B1L
ZD805	48T83128F23	Zener, HZS9B2L
ZD806	48T83128F04	Zener, HZS6B1L
DSP001	48T81048F02	Surge Protector, DSP-201M
Crystals		
X001	91T45118W43	7.2MHz
X002	91T45118W18	4.332MHz
X601	91T45118W27	4.9152MHz
Coils		
L001	24T25798W13	Inductor, 1mH
L701	24T16271W13	220µH
L801	24T75055W04	Choke
Thermistor / Filter		
TH601	48T93439F06	100K ohm
BPF001	91T75257W01	Filter, LPF11830K
Capacitors		
C001	08S65128F69	CP., 0.01µF
E001	23T25149W01	ELY., 0.1µF / 50V
C002	08S65128F78	CP., 0.022µF
E002	23T25149W01	ELY., 0.1µF / 50V
E003	23T25149W09	ELY., 10µF / 16V
C004	08S65128F69	CP., 0.01µF
E004	23T25149W10	ELY., 22µF / 16V
C005	08S65128F69	CP., 0.01µF
E005	23T25149W09	ELY., 10µF / 16V

Symbol No.	Part No.	Description
C006	08T35122W13	PF., 0.1µF
E006	23T25149W13	ELY., 100µF / 10V
C007	08S65128F69	CP., 0.01µF
C008	08T15399W02	CP., 0.033µF
E008	23T25149W14	ELY., 0.68µF / 50V
C009	08T35122W15	PF., 0.15µF
E009	23T25149W16	ELY., 22µF / 6.3V
C010	08T15399W02	CP., 0.033µF
E010	23T25149W09	ELY., 10µF / 16V
C011	08S65128F69	CP., 0.01µF
E011	23T25149W06	ELY., 2.2µF / 50V
C012	08S65128F78	CP., 0.022µF
E012	23T25149W09	ELY., 10µF / 16V
C013	08S82122F23	CP., 27pF
E013	23T25149W14	ELY., 0.68µF / 50V
C014	08S82122F23	CP., 27pF
E014	23S16086W01	ELY., 220µF / 10V
C015	08S82122F23	CP., 27pF
E015	23T25149W13	ELY., 100µF / 10V
C016	08S82122F23	CP., 27pF
E016	23T25149W09	ELY., 10µF / 16V
C017	08S82122F55	CP., 560pF
E017	23T25149W09	ELY., 10µF / 16V
C018	08S82122F49	CP., 330pF
E018	23T25149W01	ELY., 0.1µF / 50V
C020	08S65128F78	CP., 0.022µF
E020	23T25149W05	ELY., 1µF / 50V
C021	08S65128F78	CP., 0.022µF
E021	23T25149W05	ELY., 1µF / 50V
C022	08S65128F69	CP., 0.01µF
E022	23T25149W05	ELY., 1µF / 50V
C023	08S65128F61	CP., 2200pF
C024	08S65128F81	CP., 0.039µF
C025	08S65128F69	CP., 0.01µF
C026	08S65128F69	CP., 0.01µF
C027	08S82122F59	CP., 820pF
C028	08S65128F78	CP., 0.022µF
C029	08S65128F78	CP., 0.022µF
C030	08S53332F64	CP., 0.068µF
C031	08S65128F71	CP., 0.015µF
C032	08S82122F37	CP., 100pF
C033	08S82122F37	CP., 100pF
C034	08S82122F37	CP., 100pF
C035	08S82122F37	CP., 100pF
C036	08S82122F31	CP., 56pF
C037	08S82122F37	CP., 100pF
C088	08S65128F78	CP., 0.022µF
C099	23T82372F19	ELY., (B.P) 2.2µF / 50V
C202	08S65128F69	CP., 0.01µF
C203	08S65128F69	CP., 0.01µF
C204	08T35122W07	PF., 0.033µF
E204	23T25149W08	ELY., 4.7µF / 50V

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

	Symbol No.	Part No.	Description	
	C205	08T35122W07	PF.,	0.033μF
	E205	23T25149W09	ELY.,	10μF / 16V
	C206	08T35122W39	PF.,	5600pF
	E206	23T25149W09	ELY.,	10μF / 16V
	C207	08T35122W39	PF.,	5600pF
	E207	23T25149W12	ELY.,	47μF / 16V
	E208	23T25149W12	ELY.,	47μF / 16V
	E209	23T25149W14	ELY.,	0.68μF / 50V
	C210	08T35122W13	PF.,	0.1μF
	E210	23T25149W14	ELY.,	0.68μF / 50V
	E211	23T25149W13	ELY.,	100μF / 10V
	E212	23T25149W15	ELY.,	4.7μF / 35V
○	E213	23T25149W15	ELY.,	4.7μF / 35V
	E214	23T25149W15	ELY.,	4.7μF / 35V
○	E215	23T25149W09	ELY.,	10μF / 16V
○	E216	23T25149W09	ELY.,	10μF / 16V
	E217	23T25149W09	ELY.,	10μF / 16V
	E218	23T25149W09	ELY.,	10μF / 16V
	E220	23T25149W13	ELY.,	100μF / 10V
	E221	23T25149W13	ELY.,	100μF / 10V
	E222	23T25149W15	ELY.,	4.7μF / 35V
	C301	08T35122W15	PF.,	0.15μF
	E301	23T25149W09	ELY.,	10μF / 16V
	C302	08T35122W15	PF.,	0.15μF
	E302	23T25149W09	ELY.,	10μF / 16V
	C303	08T35122W15	PF.,	0.15μF
	E303	23T25149W09	ELY.,	10μF / 16V
	C304	08T35122W15	PF.,	0.15μF
	E304	23T25149W09	ELY.,	10μF / 16V
	C305	08T35122W15	PF.,	0.15μF
	E305	23T25149W05	ELY.,	1μF / 50V
	C306	08T35122W15	PF.,	0.15μF
	E306	23T25149W05	ELY.,	1μF / 50V
	C307	08T35122W15	PF.,	0.15μF
	E307	23T25149W05	ELY.,	1μF / 50V
	C308	08T35122W15	PF.,	0.15μF
	E308	23T25149W05	ELY.,	1μF / 50V
	C309	08S53332F67	CP.,	0.1μF
	E309	23T55405W01	ELY.,	10μF / 16V
	C310	08S82122F61	CP.,	1000pF
	E310	23T55405W01	ELY.,	10μF / 16V
	E311	23T55405W01	ELY.,	10μF / 16V
	E312	23T55405W01	ELY.,	10μF / 16V
	E313	23T55378W01	ELY.,	220μF / 10V
	E314	23T55378W01	ELY.,	220μF / 10V
	E317	23T35505W05	ELY.,	2200μF / 16V
	E318	23T35505W05	ELY.,	2200μF / 16V
	C601	08S82122F17	CP.,	15pF
	E601	23T25149W09	ELY.,	10μF / 16V
	C602	08S82122F17	CP.,	15pF
	E602	23S16086W01	ELY.,	220μF / 10V
	C603	08S82122F37	CP.,	100pF
	C604	08S82122F37	CP.,	100pF
	C605	08S65128F78	CP.,	0.022μF
	C606	08S65128F69	CP.,	0.01μF
	C607	08S82122F37	CP.,	100pF
	C608	08S82122F53	CP.,	470pF
	C609	08S82122F37	CP.,	100pF
	C701	08T15399W03	CP.,	0.047μF
	C702	08S82122F57	CP.,	680pF
	C703	08S82122F59	CP.,	820pF
	C704	08S53332F67	CP.,	0.1μF
	E705	23T55378W03	ELY.,	470μF / 10V
	E706	23S16086W03	ELY.,	100μF / 16V
○	C801	08S65128F69	CP.,	0.01μF
	E801	23T25149W05	ELY.,	1μF / 50V
	E802	23T25149W03	ELY.,	0.33μF / 50V
	E803	23T25149W04	ELY.,	0.47μF / 50V
	E804	23T25149W05	ELY.,	1μF / 50V
	E805	23T25149W09	ELY.,	10μF / 16V
	E806	23T25149W09	ELY.,	10μF / 16V
	E811	23T25149W01	ELY.,	0.1μF / 50V
	E812	23T25149W05	ELY.,	1μF / 50V

Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)

	R001	06S64995F53	1K ohm
	R002	06S64995F77	10K ohm
	R003	06S64995F77	10K ohm
	R004	06S64995F77	10K ohm
	R005	06S64995F77	10K ohm
	R006	06S64995F61	2.2K ohm
	R008	06S64995F77	10K ohm
	R009	06S64995F77	10K ohm
	R010	06S64995F53	1K ohm
	R011	06S64995F61	2.2K ohm
	R012	06S64995F85	22K ohm
	R013	06S64995F29	100 ohm
	R015	06S64995F77	10K ohm
	R016	06S64995F61	2.2K ohm
	R017	06S64995F53	1K ohm
	R018	06S64995F71	5.6K ohm
	R019	06S64995F53	1K ohm
	R020	06S64995F53	1K ohm
	R021	06S64995F77	10K ohm
	R022	06S64995F77	10K ohm
	R023	06S64995F77	10K ohm
	R024	06S64995F53	1K ohm
	R025	06S64995F77	10K ohm
	R026	06S64995F61	2.2K ohm

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

	Symbol No.	Part No.	Description
	R027	06S64995F93	47K ohm
	R028	06S64995F65	3.3K ohm
	R029	06S64995F65	3.3K ohm
	R030	06S70072F53	1K ohm 1/4W
	R031	06S64995F77	10K ohm
	R032	06S70072F41	330 ohm 1/4W
	R033	06S70072F53	1K ohm 1/4W
	R034	06S70072F71	5.6K ohm 1/4W
	R035	06S64995F77	10K ohm
	R036	06S64995F69	4.7K ohm
	R037	06S64995F79	12K ohm
	R038	06S64996F04	120K ohm
	R039	06S64995F13	22 ohm
	R040	06S64996F02	100K ohm
	R041	06S64996F02	100K ohm
	R042	06S64995F77	10K ohm
	R043	06S64996F02	100K ohm
	R044	06S64995F81	15K ohm
	R045	06S64996F09	200K ohm
	R046	06S64996F14	330K ohm
	R047	06S64995F29	100 ohm
	R048	06S64995F61	2.2K ohm
	R049	06S64995F61	2.2K ohm
	R050	06S64995F83	18K ohm
	R051	06S64995F83	18K ohm
	R052	06S64995F75	8.2K ohm
	R053	06S64995F85	22K ohm
	R055	06S64995F53	1K ohm
	R056	06S64995F77	10K ohm
	R057	06S64995F77	10K ohm
	R058	06S64995F79	12K ohm
	R060	06S64995F53	1K ohm
	R201	06S64995F65	3.3K ohm
	R202	06S64995F65	3.3K ohm
	R203	06S64995F63	2.7K ohm
	R204	06S64995F63	2.7K ohm
	R205	06S64995F91	39K ohm
	R206	06S64995F53	1K ohm
	R207	06S64995F77	10K ohm
	R208	06S64995F77	10K ohm
	R209	06S64995F91	39K ohm
	R210	06S64995F91	39K ohm
	R211	06S64995F53	1K ohm
	R212	06S64995F53	1K ohm
○	R220	06S64995F29	100 ohm
○	R221	06S64995F29	100 ohm
	R222	06S64995F29	100 ohm
	R223	06S64995F29	100 ohm
○	R224	06S64995F85	22K ohm
○	R225	06S64995F85	22K ohm
	R226	06S64995F85	22K ohm
	R227	06S64995F85	22K ohm

	Symbol No.	Part No.	Description
○	R228	06S64995F69	4.7K ohm
○	R229	06S64995F69	4.7K ohm
	R230	06S64995F69	4.7K ohm
	R231	06S64995F69	4.7K ohm
○	R232	06S64995F29	100 ohm
○	R233	06S64995F29	100 ohm
	R234	06S64995F29	100 ohm
	R235	06S64995F29	100 ohm
	R240	06S64995F61	2.2K ohm
	R241	06S64995F61	2.2K ohm
	R245	06S64995F53	1K ohm
	R246	06S64995F53	1K ohm
	R247	06S70072F46	510 ohm 1/4W
	R301	06S64995F37	220 ohm
	R302	06S64995F37	220 ohm
	R303	06S64995F37	220 ohm
	R304	06S64995F37	220 ohm
	R309	06S64995F57	1.5K ohm
	R310	06S64995F57	1.5K ohm
	R311	06S64995F57	1.5K ohm
	R312	06S64995F57	1.5K ohm
	R313	06S64995F53	1K ohm
	R314	06S64995F53	1K ohm
	R315	06S64995F53	1K ohm
	R316	06S64995F53	1K ohm
	R317	06S64995F57	1.5K ohm
	R318	06S64995F57	1.5K ohm
	R319	06S53331F40	2.2 ohm 1/8W
	R320	06S53331F40	2.2 ohm 1/8W
	R321	06S53331F40	2.2 ohm 1/8W
	R322	06S53331F40	2.2 ohm 1/8W
	R323	06S64995F57	1.5K ohm
	R324	06S64995F57	1.5K ohm
	R325	06S53331F40	2.2 ohm 1/8W
	R326	06S53331F40	2.2 ohm 1/8W
	R327	06S53331F40	2.2 ohm 1/8W
	R328	06S53331F40	2.2 ohm 1/8W
	R329	06S64995F77	10K ohm
	R330	06S64995F69	4.7K ohm
	R331	06S64995F69	4.7K ohm
	R332	06S64995F69	4.7K ohm
	R333	06S64995F69	4.7K ohm
	R602	06S64995F69	4.7K ohm
	R603	06S64995F93	47K ohm
	R604	06S64995F53	1K ohm
	R605	06S64995F53	1K ohm
	R607	06S64995F53	1K ohm
	R608	06S64995F53	1K ohm
	R609	06S64995F53	1K ohm
	R610	06S64995F53	1K ohm
	R611	06S64995F53	1K ohm
	R612	06S64995F53	1K ohm

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

Symbol No.	Part No.	Description
R613	06S64995F77	10K ohm
R614	06S64996F02	100K ohm
R616	06S64996F02	100K ohm
○ R617	06S64996F02	100K ohm
● R618	06S64996F02	100K ohm
R619	06S64996F02	100K ohm
R620	06S64995F61	2.2K ohm
R622	06S64995F77	10K ohm
R623	06S64995F77	10K ohm
R625	06S70072F77	10K ohm 1/4W
R626	06S70072F77	10K ohm 1/4W
R627	06S70072F77	10K ohm 1/4W
R631	06S64995F53	1K ohm
○ R635	06S64995F53	1K ohm
R636	06S64995F53	1K ohm
R638	06S64995F53	1K ohm
R639	06S64995F53	1K ohm
R640	06S64996F18	470K ohm
R642	06S64996F02	100K ohm
R644	06S64995F85	22K ohm
R646	06S64995F53	1K ohm
R647	06S64995F53	1K ohm
R648	06S64995F53	1K ohm
R649	06S64995F53	1K ohm
R650	06S64996F02	100K ohm
R702	06T15443W63	2.7K ohm
R703	06T15443W79	12K ohm
R704	06S64995F74	7.5K ohm
R705	06S64995F81	15K ohm
R706	06S64995F93	47K ohm
R707	06S70072F01	4.7 ohm 1/4W
R708	06S70072F01	4.7 ohm 1/4W
R709	06S70072F45	470 ohm 1/4W
R710	06S70072F45	470 ohm 1/4W
R714	06S70072F01	4.7 ohm 1/4W
R801	06S70072F45	470 ohm 1/4W
R802	06S64995F77	10K ohm
R804	06S64996F10	220K ohm
R805	06S64995F77	10K ohm
R806	06S64995F61	2.2K ohm
R807	06S64995F77	10K ohm
R809	06S70072F03	6.8 ohm 1/4W
R810	06S70072F03	6.8 ohm 1/4W
R811	06S70072F03	6.8 ohm 1/4W
R812	06S64995F77	10K ohm
R813	06S70072F61	2.2K ohm 1/4W
R814	06S64995F77	10K ohm
R815	06S64995F77	10K ohm
R816	06S70072F57	1.5K ohm 1/4W
R817	06S64995F77	10K ohm
R818	06S70072F57	1.5K ohm 1/4W
R819	06S70072F77	10K ohm 1/4W

Symbol No.	Part No.	Description
○ R820	06S64995F85	22K ohm
○ R821	06S64995F85	22K ohm
R823	06S64995F77	10K ohm
R824	06S70072F55	1.2K ohm 1/4W
R825	06S70072F55	1.2K ohm 1/4W
R826	06S64995F69	4.7K ohm
R830	06S70072F77	10K ohm 1/4W
R831	06S64995F69	4.7K ohm
R832	06S64995F77	10K ohm
R833	06S64996F02	100K ohm
R834	06S70072F55	1.2K ohm 1/4W
R835	06S70072F57	1.5K ohm 1/4W
R836	06S70072F57	1.5K ohm 1/4W
R837	06S64995F69	4.7K ohm
R855	06S70072F55	1.2K ohm 1/4W

Front P. C. Board

IC

IC401	51T55492W01	LC75850W

Transistors

○ Q401	48T63461F04	CP., 2SC2411K
○ Q402	48T63461F04	CP., 2SC2411K
○ Q403	48T62967F03	CP., DTC124K
○ Q404	48T63461F04	CP., 2SC2411K
○ Q405	48T63461F04	CP., 2SC2411K
○ Q406	48T63461F04	CP., 2SC2411K

Diodes

D401	48T64134F01	CP., DA204K
D402	48T64134F01	CP., DA204K
D403	48T64134F01	CP., DA204K
D404	48T64134F01	CP., DA204K
○ D405	48T64134F01	CP., DA204K

Switches

S401	40T55656W03	Tact, SKQMAJ (EJECT)
S402	40T55656W03	Tact, SKQMAJ (M.S. · CD · FF / UP)
S403	40T55656W03	Tact, SKQMAJ (SCAN / 3)
S404	40T55656W03	Tact, SKQMAJ (6)
○ S405	40T55656W03	Tact, SKQMAJ (ILLUMI / 5)
● S405	40T55656W03	Tact, SKQMAJ (5)

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

Symbol No.	Part No.	Description
S406	40T55656W03	Tact, SKQMAJ (RPT / 2)
S407	40T55656W03	Tact, SKQMAJ (4)
S408	40T75234W01	Tact, SKQNAC (DISC · PLAY / PAUSE)
S409	40T75234W01	Tact, SKQNAC (TUNER / BAND)
○ S410	40T55571W01	Tact, SKQAXX (UP)
● S411	40T75234W01	Tact, SKQNAC (UP)
S412	40T55656W03	Tact, SKQMAJ (M.S. · CD · REW / DN)
S413	40T55656W03	Tact, SKQMAJ (M.I.X. / 1)
S414	40T75234W01	Tact, SKQNAC (PWR / INTLZ)
S415	40T75234W01	Tact, SKQNAC (RDS)
S416	40T55656W03	Tact, SKQMAJ (TUNE / A.ME)
○ S417	40T55571W01	Tact, SKQAXX (DOWN)
● S418	40T75234W01	Tact, SKQNAC (DOWN)
S419	40T75234W01	Tact, SKQNAC (MODE / LOUD)
S420	40T75234W01	Tact, SKQNAC (T.INFO / PTY)

Lamps

PL401	65T75231W01	9V-85mA
○ PL402	65T75231W02	9V-85mA
○ PL403	65T75233W02	6V-80mA
○ PL404	65T75232W02	6V-80mA
○ PL405	65T75233W02	6V-80mA
○ PL406	65T75233W02	6V-80mA
PL407	65T75233W01	6V-80mA
PL408	65T75232W01	6V-80mA
PL409	65T75232W01	6V-80mA
PL410	65T75233W01	6V-80mA
PL411	65T75233W01	6V-80mA

LED's

○ LD401	48T75261W01	CP., SML-020PDTT (GRN / ORG)
○ LD402	48T75261W01	CP., SML-020PDTT (GRN / ORG)
● LD403	48T65477W03	CP., SML-010PTT (GRN)
● LD404	48T65477W03	CP., SML-010PTT (GRN)
○ LD405	48T75261W01	CP., SML-020PDTT (GRN / ORG)
● LD406	48T65477W03	CP., SML-010PTT (GRN)

Capacitors

C401	08S82122F53	CP., 470pF
E401	23T25191W05	ELY., 10μF / 6.3V
C402	08S65128F78	CP., 0.022μF

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R401	06S64995F77	10K ohm
R402	06S64995F77	10K ohm
R403	06S64995F77	10K ohm
R404	06S64995F77	10K ohm
○ R405	06S64995F77	10K ohm
R406	06S64995F75	8.2K ohm
R407	06S64995F71	5.6K ohm
R408	06S64995F61	2.2K ohm
R409	06S70072F04	8.2 ohm 1/4W
R410	06S70072F48	620 ohm 1/4W
○ R411	06S70072F12	20 ohm 1/4W
R412	06S70072F48	620 ohm 1/4W
○ R413	06S70072F69	4.7K ohm 1/4W
○ R415	06S70072F69	4.7K ohm 1/4W
○ R416	06S70072F61	2.2K ohm 1/4W
○ R417	06S70072F63	2.7K ohm 1/4W
○ R419	06S70072F29	100 ohm 1/4W
○ R420	06S70072F29	100 ohm 1/4W
○ R421	06S70072F29	100 ohm 1/4W
○ R422	06S70072F29	100 ohm 1/4W
R424	06S70072F48	620 ohm 1/4W
○ R427	06S70072F55	1.2K ohm 1/4W
○ R428	06S70072F55	1.2K ohm 1/4W
● R428	06S70072F51	820 ohm 1/4W
R429	06S70072F29	100 ohm 1/4W
R430	06S70072F29	100 ohm 1/4W
R431	06S70072F29	100 ohm 1/4W
R432	06S70072F29	100 ohm 1/4W
R433	06S70072F48	620 ohm 1/4W
R434	06S70072F48	620 ohm 1/4W
R435	06S64995F57	1.5K ohm
R436	06S64995F61	2.2K ohm
R437	06S64995F65	3.3K ohm
R438	06S64995F71	5.6K ohm
R439	06S64995F77	10K ohm
R440	06S64995F89	33K ohm
R441	06S64995F57	1.5K ohm
R442	06S64995F61	2.2K ohm
R443	06S64995F65	3.3K ohm
R444	06S64995F71	5.6K ohm
R445	06S64995F77	10K ohm
R446	06S64995F57	1.5K ohm
R447	06S64995F61	2.2K ohm
R448	06S64995F65	3.3K ohm
R449	06S64995F71	5.6K ohm
R450	06S64995F77	10K ohm
R451	06S64995F89	33K ohm
R452	06S64995F53	1K ohm
R453	06S64995F53	1K ohm
R454	06S64995F53	1K ohm

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

	Symbol No.	Part No.	Description
	R455	06S64996F04	120K ohm
○	R456	06S70072F69	4.7K ohm 1/4W
○	R457	06S70072F55	1.2K ohm 1/4W
○	R458	06S70072F55	1.2K ohm 1/4W
●	R458	06S70072F51	820 ohm 1/4W
	R460	06S64995F53	1K ohm

DP-Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC1101	51T65304W03	TC9284AF
IC1102	51T25984W01	TA8191F
IC1103	51T65291W01	BA6790FP
IC1201	51T65210W01	TA2009F
IC1202	51T11054W02	NJM78L05UA
IC1507	51T65209W01	BA6287F

Transistors

Symbol No.	Part No.	Description
Q1102	48T63420F01	CP., 2SA1037K
Q1103	48T80611F01	CP., 2SB1132
Q1112	48T94606F05	CP., DTC114TU
Q1113	48T94606F05	CP., DTC114TU
Q1115	48T94606F53	CP., DTA124EU
Q1116	48T94606F03	CP., DTC124EU
Q1501	48T80612F01	CP., 2SB1188
Q1502	48T94606F03	CP., DTC124EU
Q1503	48T81552F01	CP., 2SD1383K
Q1508	48T80611F01	CP., 2SB1132

Crystal

Symbol No.	Part No.	Description
X1101	91T45433W92	CP., 16.934MHz

Photo Transistors

Symbol No.	Part No.	Description
PT1501	48T84017F15	PS1101W
PT1502	48T84017F15	PS1101W
PT1503	48T84017F15	PS1101W
PT1504	48T84017F15	PS1101W
PT1505	48T84017F15	PS1101W

Diodes

Symbol No.	Part No.	Description
D1501	48T63462F01	CP., DAN202K
D1502	48T15512W01	CP., DSM10
D1503	48T15512W01	CP., DSM10
D1504	48T81063F01	CP., MA159

Capacitors

Symbol No.	Part No.	Description
C1101	08S45676W73	CP., 0.01μF
E1101	23T25191W42	CP., ELY. 22μF / 6.3V
E1102	23T25191W05	CP., ELY. 10μF / 6.3V
E1103	23T25191W05	CP., ELY. 10μF / 6.3V
C1105	08S45676W67	CP., 3300pF
E1105	23T25191W12	CP., ELY. 4.7μF / 16V
C1106	08S45676W67	CP., 3300pF
C1107	08S45677W36	CP., 100pF
E1107	23S55311W23	CP., TAN. 10μF / 10V
C1108	08S45676W73	CP., 0.01μF
E1108	23S55311W22	CP., TAN. 4.7μF / 10V
C1109	08S45676W73	CP., 0.01μF
E1109	23S55311W22	CP., TAN. 4.7μF / 10V
C1110	08S45676W73	CP., 0.01μF
E1110	23S55311W23	CP., TAN. 10μF / 10V
C1111	08S45676W60	CP., 1000pF
E1111	23S55311W23	CP., TAN. 10μF / 10V
C1113	08T15399W01	CP., 0.022μF
E1113	23T25191W12	CP., ELY. 4.7μF / 16V
C1114	08S45676W68	CP., 3900pF
C1115	08T35374W02	CP., 0.056μF
C1116	08S45677W44	CP., 220pF
C1117	08S45676W66	CP., 2700pF
E1117	23T25191W28	CP., ELY. 0.47μF / 50V
C1118	08T15399W03	CP., 0.047μF
C1119	08S45677W30	CP., 56pF
C1120	08S45676W73	CP., 0.01μF
E1120	23T25191W05	CP., ELY. 10μF / 6.3V
C1121	08S45677W14	CP., 12pF
E1121	23T25191W05	CP., ELY. 10μF / 6.3V
C1122	08S45676W73	CP., 0.01μF
E1122	23T25191W42	CP., ELY. 22μF / 6.3V
C1123	08T15399W03	CP., 0.047μF
C1124	08S45677W05	CP., 3pF
C1126	08T35374W01	CP., 0.1μF
E1127	23T25191W30	CP., ELY. 1μF / 50V
E1128	23S55311W23	CP., TAN. 10μF / 10V
C1129	08S45676W73	CP., 0.01μF
E1129	23T25191W42	CP., ELY. 22μF / 6.3V
C1130	08S45676W69	CP., 4700pF
E1130	23T25191W42	CP., ELY. 22μF / 6.3V
C1140	08S45676W69	CP., 4700pF

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

Symbol No.	Part No.	Description
C1142	08S45676W65	CP., 2200pF
C1150	08S45676W78	CP., 0.047μF
C1151	08S45676W78	CP., 0.047μF
C1153	08S45676W78	CP., 0.047μF
C1155	08S45676W78	CP., 0.047μF
C1156	08S45677W12	CP., 10pF
C1157	08S45677W12	CP., 10pF
C1191	08T15399W03	CP., 0.047μF
C1201	08S45676W71	CP., 6800pF
E1201	23T25191W41	CP., ELY. 10μF / 16V
C1202	08S45676W71	CP., 6800pF
E1202	23T25191W41	CP., ELY. 10μF / 16V
C1203	08S45677W36	CP., 100pF
E1203	23T25191W42	CP., ELY. 22μF / 6.3V
C1204	08S45677W36	CP., 100pF
E1204	23T25191W42	CP., ELY. 22μF / 6.3V
C1205	08S45677W36	CP., 100pF
E1205	23T25191W41	CP., ELY. 10μF / 16V
C1206	08S45677W36	CP., 100pF
E1206	23T25191W42	CP., ELY. 22μF / 6.3V
C1501	08S45676W73	CP., 0.01μF
E1501	23T25191W05	CP., ELY. 10μF / 6.3V
C1502	08S45676W73	CP., 0.01μF
C1503	08S65128F76	CP., 0.1μF
E1511	23T25191W05	CP., ELY. 10μF / 6.3V

Resistors (All resistors are chip 1/16W±5% unless otherwise noted.)

R1102	06S45675W22	470K ohm
R1103	06S45674W43	270 ohm
R1105	06S45674W91	27K ohm
R1106	06S45674W95	39K ohm
R1107	06S45675W14	220K ohm
R1108	06S45675W06	100K ohm
R1109	06S45674W87	18K ohm
R1110	06S45674W61	1.5K ohm
R1111	06S45674W87	18K ohm
R1112	06S45674W95	39K ohm
R1113	06S45674W65	2.2K ohm
R1114	06S45675W06	100K ohm
R1115	06S45674W81	10K ohm
R1116	06S45674W97	47K ohm
R1117	06S45675W34	2.2M ohm
R1118	06S45674W93	33K ohm
R1119	06S45674W57	1K ohm
R1120	06S45674W81	10K ohm
R1121	06S45674W91	27K ohm
R1122	06S45674W67	2.7K ohm
R1123	06S45675W16	270K ohm

Symbol No.	Part No.	Description
R1124	06S45674W87	18K ohm
R1125	06S45674W97	47K ohm
R1126	06S45674W75	5.6K ohm
R1127	06S45675W08	120K ohm
R1128	06S45675W06	100K ohm
R1129	06S45674W85	15K ohm
R1130	06S45674W89	22K ohm
R1131	06S45674W81	10K ohm
R1132	06S45674W81	10K ohm
R1133	06S45674W81	10K ohm
R1134	06S45675W24	560K ohm
R1135	06S45675W06	100K ohm
R1136	06S45694W65	2.2K ohm
R1137	06S45674W81	10K ohm
R1138	06S45674W85	15K ohm
R1139	06S45674W73	4.7K ohm
R1140	06S45674W73	4.7K ohm
R1144	06S45674W57	1K ohm
R1145	06S45674W49	470 ohm
R1146	06S45674W75	5.6K ohm
R1147	06S45675W02	68K ohm
R1150	06S45674W33	100 ohm
R1151	06S45674W33	100 ohm
R1167	06S45675W09	130K ohm
R1179	06S45674W67	2.7K ohm
R1180	06S45674W81	10K ohm
R1181	06S45674W89	22K ohm
R1185	06S45674W87	18K ohm
R1188	06S45674W69	3.3K ohm
R1189	06S45675W22	470K ohm
R1190	06S45674W97	47K ohm
R1191	06S45674W73	4.7K ohm
R1196	06S45674W81	10K ohm
R1221	06S70072F15	27 ohm 1/4W
R1223	06S45674W81	10K ohm
R1224	06S45674W81	10K ohm
R1225	06S45674W81	10K ohm
R1226	06S45674W81	10K ohm
R1227	06S45674W25	47 ohm
R1228	06S45674W25	47 ohm
R1501	06S45675W06	100K ohm
R1502	06S45675W06	100K ohm
R1503	06S45675W06	100K ohm
R1504	06S45675W06	100K ohm
R1505	06S45675W06	100K ohm
R1506	06S45674W97	47K ohm
R1507	06S45674W97	47K ohm
R1508	06S45675W22	470K ohm
R1509	06S45674W81	10K ohm
R1510	06S45674W81	10K ohm
R1511	06S70072F53	1K ohm 1/4W
R1512	06S45674W95	39K ohm

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

	Symbol No.	Part No.	Description
	R1513	06S45674W95	39K ohm
	VR1101	18T45357W20	Variable, CP. 150K ohm
	VR1102	18T45357W14	Variable, CP. 15K ohm
	VR1103	18T45357W10	Variable, CP. 3.3K ohm
	LED P. C. Board		
	LED's		
	LD1501	48T16057W02	AN501-B1 (RED)
	LD1502	48T16057W02	AN501-B1 (RED)
	LD1503	48T16057W02	AN501-B1 (RED)
	LD1504	48T16057W02	AN501-B1 (RED)
	LD1505	48T16057W02	AN501-B1 (RED)
	Miscellaneous		
	ET001	09T55211W01	Antenna Receptacle
○	ET201	01T75188W01	F-Out / Sub-W. & Rear Out RCA / Remote Turn-On / Audio Interrupt In Connector
●	ET201	01T75188W04	R-Out / Sub-W. RCA / Remote Turn-On Connector
	ET801	01T75292W02	Assy., ISO Connector (OPEN / SPEAKER / POWER)
○	CB401	09T75038W14	Connector (16P)
●	CB401	09T75038W12	Connector (16P)
	CH401	09T75039W16	Connector (16P)
	HD1201	88T55261W01	Pick Up Unit
	LCD401	65T75147W01	LCD Display
	M1301	01V53900W77	Assy., Loading Motor (3.5V-110mA)
	M1302	59T55262W01	Motor, Spindle (3V-120mA)
	M1303	01V54100W69	Assy., Sled Motor (3.5V-110mA)
	S1301	40T71025F03	Switch, Detector (CAM END)
	S1302	40T71025F03	Switch, Detector (LIMIT)
	SD1301	01T55277W01	Assy., Solenoid

Symbol No.	Part No.	Description

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

Cabinet Assembly Parts List

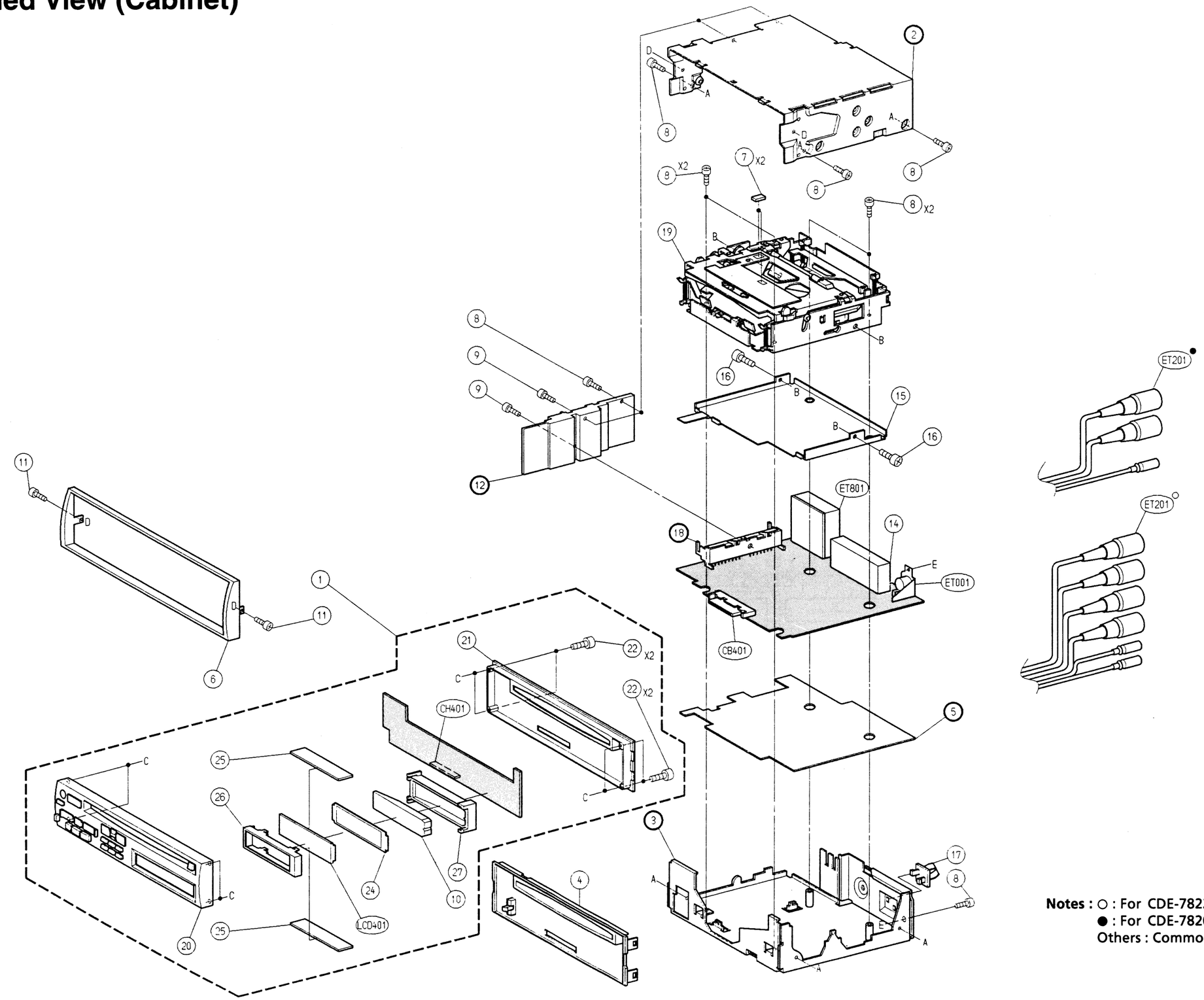
Note : No parts number on parts list are not supplied.

Symbol No.		Index	Part No.	Description
○	1	3-C	01V71900W79	Assy., Nose Unit
●	1	3-C	01V73100W31	Assy., Nose Unit
	4	5-D	13C70398W01	Assy., Front Escutcheon
	6	4-B	33C70276W01	Assy., Face Plate
	7	2-E	75S62361F43	Cushion, Rubber
	8		03S44205G29	Screw, Pan (M2.6×6)
	9		03S38013W05	Screw, Pan (M2.6×16)
	10	5-C	61A70307W01	Lens, LCD
	11		03S38013W13	Screw, Bind (M2.6×6)
	14	3-F	77B60578W01	FM/MW/LW Tuner Unit, MB4R3010 (FE001)
	15	3-F	15B61301W01	Cover, Shield
	16		03S38013W20	Screw, Pan (M2.6×3)
	17	5-F	15A70387W01	Holder, Antenna
	19	2-E	81D60580W02	CD Deck Mechanism, DP24H02A
○	20	5-B	13D70546W01	Assy., Nosepiece
●	20	5-B	13D70546W05	Assy., Nosepiece
	21	4-D	13D70403W01	Nose, Bottom
	22	4-D	03S68555F39	Screw, Pan (M1.7×10)
	24	5-C	26A70309W01	Reflector, Sheet
	25		75T75253W01	Rubber, Electric
	26	4-B	15B70310W01	Cover, LCD
	27	5-C	15B70308W01	Case, LCD

Symbol No.	Index	Part No.	Description

Notes : ○ : For CDE-7822R Model Only, ● : For CDE-7820R Model Only, Others : Common.

Exploded View (Cabinet)

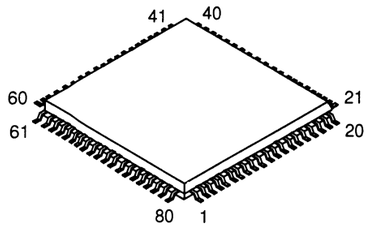


Notes : ○ : For CDE-7822R Model Only,
● : For CDE-7820R Model Only,
Others : Common.

Semi - Conductor Lead Identifications

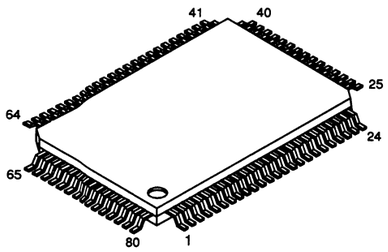
Note : For the parts not mentioned, refer to the Schematic Diagram.

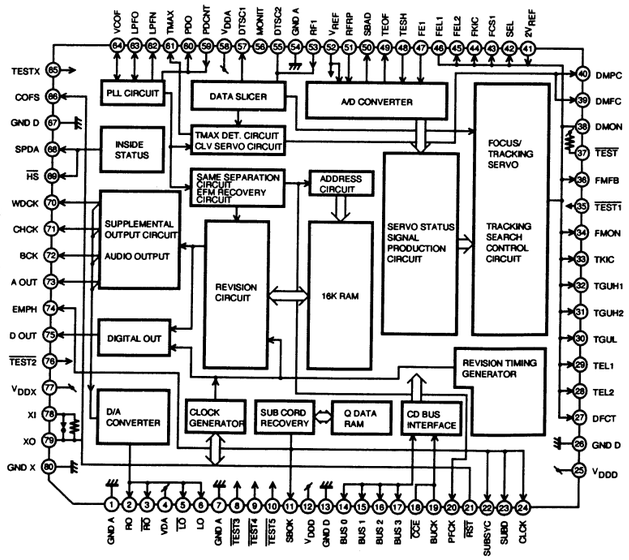
75099W03 : IC601



PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	KEY-3	I	21	NC	—	41	CCE	O	61	GND	—
2	KEY-2	I	22	NC	—	42	LOCK	I	62	A-HOLD	I
3	KEY-1	I	23	L-CONT	O	43	A-MUTE	O	63	B-HOLD	I
4	GND	—	24	SOL	O	44	RDS-DATA	I	64	RDS-CLK	I
5	INTLZ	I	25	LOAD-FWD	O	45	NC	—	65	VOL-CLK	O
6	22R/$\overline{20R}$	I	26	LOAD-BWD	O	46	ALM	O	66	VOL-DATA	O
7	AV_{REF}	—	27	PH-E	I	47	IF-MUTE	O	67	NFP-OUT1	O
8	PULL-UP	—	28	PH-D	I	48	$\overline{LPF\text{-}SW}$	O	68	V_{DD}	—
9	NC	—	29	PH-C	I	49	NC	—	69	X2	O
10	○ AMBER / ● NC	O / —	30	PH-B	I	50	SD	I	70	X1	I
11	$\overline{LCD\text{-}INH}$	O	31	PH-A	I	51	$\overline{ST}$	I	71	GND	—
12	LCD-DATA	O	32	V-CONT	O	52	PLL-CE	O	72	NC	—
13	LCD-CLK	O	33	GND	—	53	PLL-CLK	O	73	GND	—
14	LCD-CE	O	34	LIMIT-SW	I	54	PLL-D-I	I	74	V_{DD}	—
15	NC	—	35	$\overline{CAM\text{-}END}$	I	55	PLL-D-O	O	75	V_{DD}	—
16	NC	—	36	BUS0	I/O	56	NFP-OUT2	O	76	S-METER	I
17	NC	—	37	BUS1	I/O	57	PWR-IC	O	77	M/P	I
18	$\overline{PS\text{-}OFF}$	I	38	BUS2	I/O	58	OUT-REM	O	78	ADJON	I
19	POW-ON	O	39	BUS3	I/O	59	IN-INT	I	79	T-SENS	I
20	NC	—	40	BUCK	O	60	$\overline{RESET}$	I	80	NOSE	I

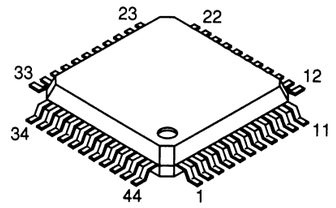
TC9284AF : IC1101 (DP24H02A)

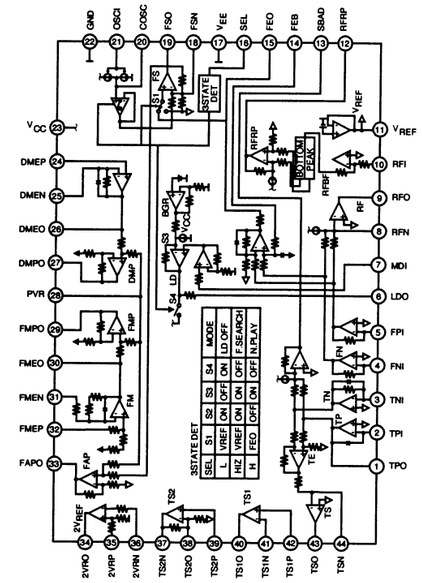




Notes : ○ : For CDE-7822R Model only, ● : For CDE-7820R Model only , Others : Common

TA8191F : IC1102 (DP24H02A)





Schematic Diagram (1/4)

IC	IC001	IC006	IC004	IC002	IC005	IC202	IC203 IC204
Transistor (Q)	Q001 Q004	Q003 Q002 Q005	Q006	Q015 Q016	Q007 Q202 Q008 Q009	Q010 Q011 Q012	Q013 Q014 Q203 Q204 Q205 Q206

Main P.C.Board (1/3)

ET001 Antenna Receptacle

DSP001 DSP-201M

BPF001 LPF11830K

FE001 FM/MW/LW Tuner Unit MB4R3010

IC001 MC14066BFL1

IC004 LC7219

IC002 NJM4558M

IC006 SAA6579T

IC005 NJM4558M

IC202 MC14066BFL1

IC203 NJM4580E

IC204 NJM4580E

Q001 FMG1 Q002 FMG1 Q003 FMG1 Q004 FMG1 Q005 FMG1 Q006 DTC124K

Q007 2SB1238 Q008 2SB1238 Q009 DTC124K Q010 2SD1766 Q011 2SD601A Q012 2SD1996 Q013 2SA1037K Q014 DTC124K

Q015 2SC2412K Q016 2SA1037K

Q202 FMG1

Q203 2SD1328 Q204 2SD1328 Q205 2SD1328 Q206 2SD1328

D001 DAN202K D002 DAN202K D003 DAN202K D004 1SS133

ZD001 HZS9C1L ZD002 HZS9C3L ZD003 HZS9A2L

X001 7.2MHz X002 4.332MHz

HIGH SPEED L.P.F.

LW SWITCHING

L.P.F.

L.P.F. CONTROL

FM REQ

SD CONTROL

IF MUTE

L.P.F. SWITCHING

RDS DECODER

ANTI-ALIASING FILTER

SC FILTER

RECONSTRUCTION FILTER

DEMODULATOR

CLOCKED COMPARATOR

ADJOINING REJECTION DETECTOR

MULTI PATH DETECTOR

FRONT/SUB WOOFER SWITCHING

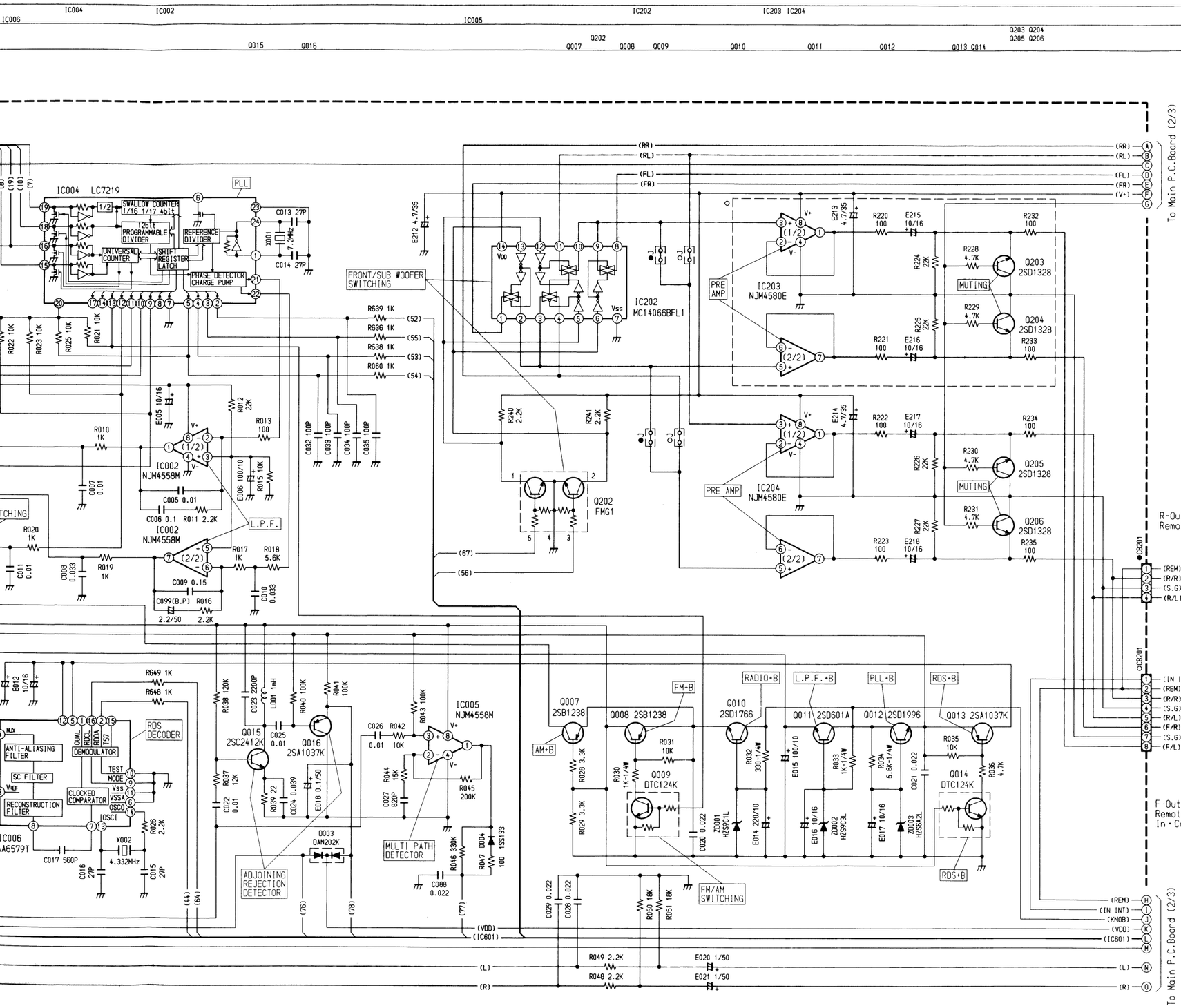
PRE AMP

MUTING

FM/AM SWITCHING

AM+B FM+B RADIO+B L.P.F.+B PLL+B RDS+B

(RR) (RL) (FL) (FR) (L) (R) (VDD) (IC601)



IC001

1	8.32V
2	4.15V
3	4.15V
4	4.15V
5	9.07V
6	9.07V
7	0V
8	2.46V
9	2.47V
10	2.11V
11	2.11V
12	9.07V
13	0V
14	9.07V

IC002

1	4.15V
2	2.85V
3	2.84V
4	0V
5	2.84V
6	2.85V
7	8.6V
8	9.09V

IC004

1	2.3V	13	3.61V
2	PS	14	NC
3	PS	15	0V
4	PS	16	0V
5	PS	17	NC
6	NC	18	PS
7	0V	19	PS
8	0V	20	5.02V
9	3.65V	21	2.84V
10	4.09V	22	2.84V
11	0V	23	0V
12	0V	24	2.59V

IC005

1	4.94V
2	4.95V
3	4.9V
4	0V
5	NC
6	NC
7	NC
8	8.94V

IC006

1	NC	9	0V
2	PS	10	0V
3	2.47V	11	0V
4	2.4V	12	4.94V
5	4.93V	13	2.11V
6	0V	14	2.72V
7	2.45V	15	NC
8	2.5V	16	PS

IC202

1	4.48V	8	4.48V
2	4.48V	9	4.48V
3	4.48V	10	4.48V
4	4.48V	11	4.48V
5	0V	12	0V
6	8.88V	13	8.86V
7	0V	14	8.88V

○IC203 IC204

1	4.48V
2	4.48V
3	4.48V
4	0V
5	4.48V
6	4.48V
7	4.48V
8	8.88V

	E	C	B		E	C	B
Q006	0V	0.9V	0V	Q014	0V	0V	8.99V
Q007	9.02V	8.95V	8.3V	Q015	0.3V	8.62V	0.97V
Q008	9.02V	8.96V	8.32V	Q016	4.92V	0V	4.92V
Q009	0V	3.61V	0V	○ Q203	0.03V	0.01V	0.72V
Q010	9.02V	14.08V	9.52V	○ Q204	0.03V	0.01V	0.72V
Q011	9.08V	14.08V	9.71V	Q205	0.03V	0.01V	0.72V
Q012	4.96V	14.08V	5.51V	Q206	0.03V	0.01V	0.72V
Q013	4.96V	4.93V	4.28V				

	1	2	3	4	5
Q001	0V	0V	4.53V	0V	4.53V
Q002	0V	9.08V	0V	0V	4.82V
Q003	0V	9.07V	0V	0V	3.64V
Q004	6.44V	0V	6.44V	0V	0V
Q005	9.07V	0V	4.82V	0V	0V
Q202	8.88V	8.88V	5.23V	0V	5.23V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : CD : Be Playing back the 2nd. Music of the Test CD (YEDS-18)
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

Notes : ○ : For CDE-7822R Model Only,
● : For CDE-7820R Model Only,
Others : Common.

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

CDE-7822R
CDE-7820R

Schematic Diagram (2/4)

IC	IC601				IC602	IC701	IC206	IC201	IC801						
Transistor (Q)	Q602 Q603	Q812	Q704				Q818	Q207 Q817	Q814 Q815	Q803	Q806 Q807 Q819	Q804	Q810 Q808 Q802	Q805 Q809 Q811 Q801	

Main P.C.Board (2/3)

To Main P.C.Board (1/3)

From DP-Main P.C.Board (CB1801)

From Front P.C.Board (CH401)

IC601 75099W03 μ-COM

IC602 S-8052HNM-CR

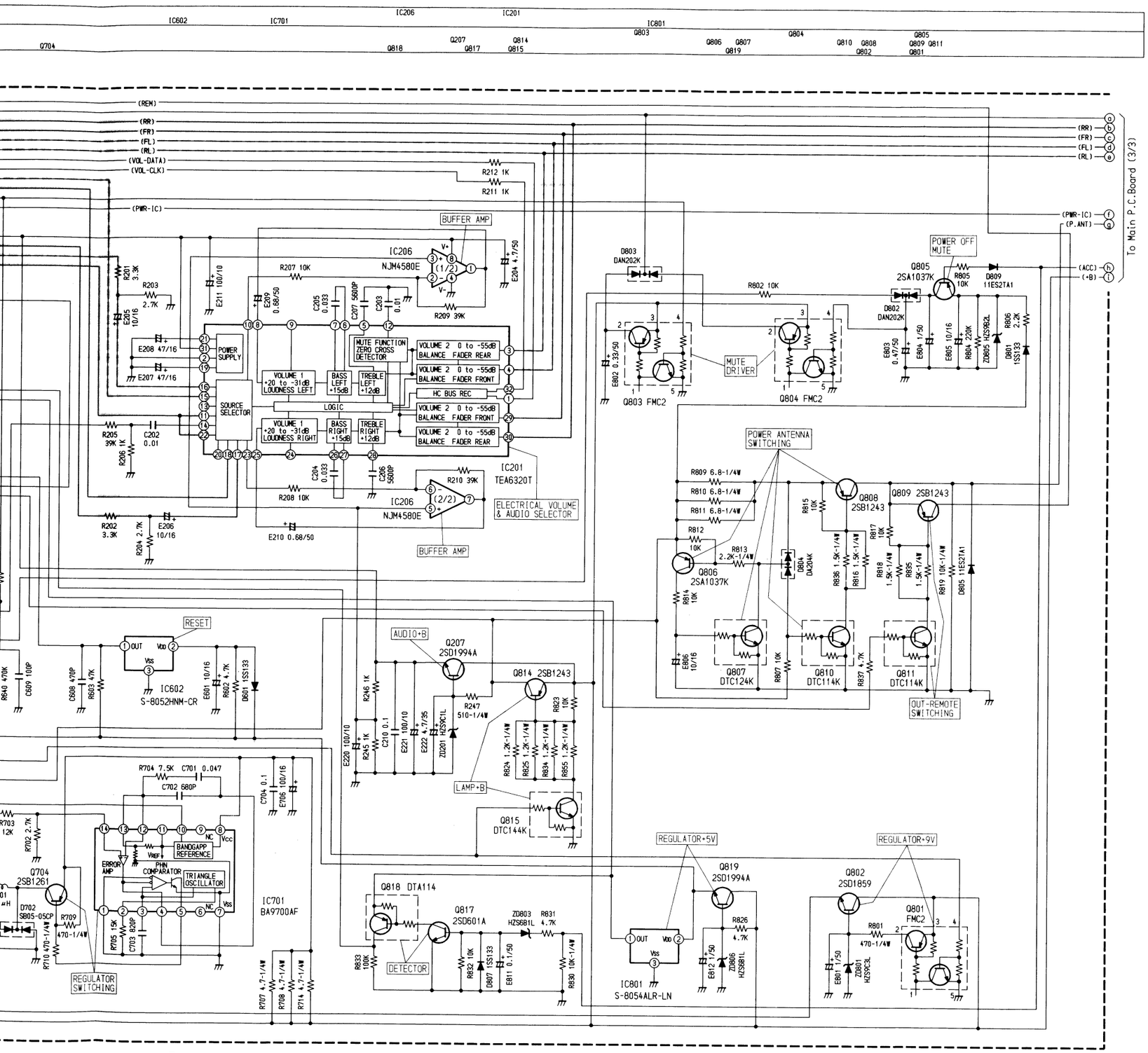
IC701 BA9700AF

IC206 NJM4580E

IC201 TEA6320T

IC801 S-8054ALR-LN

ELECTRICAL VOLUME & AUDIO SELECTOR



IC201

1	4.75V	17	4.45V
2	0V	18	4.45V
3	4.44V	19	8.76V
4	4.45V	20	NC
5	4.46V	21	4.46V
6	4.46V	22	4.45V
7	4.45V	23	4.47V
8	4.4V	24	NC
9	NC	25	4.46V
10	4.45V	26	4.4V
11	4.45V	27	4.47V
12	8.78V	28	4.47V
13	NC	29	4.46V
14	4.45V	30	4.42V
15	4.45V	31	8.86V
16	4.45V	32	5.24V

IC206

1	4.31V
2	4.45V
3	4.44V
4	0V
5	4.45V
6	4.45V
7	4.33V
8	8.85V

IC602

1	5.19V
2	5.2V
3	0V

IC801

1	4.8V
2	5.19V
3	0V

IC601

1	5.17V	21	NC	41	PS	61	0V
2	5.17V	22	NC	42	5.05V	62	4.81V
3	5.17V	23	5.24V	43	0V	63	4.82V
4	0V	24	0V	44	PS	64	PS
5	0V	25	0V	45	NC	65	5.23V
6	4.72V	26	0V	46	0V	66	4.77V
7	5.2V	27	0V	47	0V	67	5.22V
8	5.18V	28	0V	48	5.18V	68	5.23V
9	NC	29	0V	49	NC	69	PS
10	5.22V	30	0V	50	0V	70	PS
11	5.24V	31	0V	51	5.2V	71	0V
12	PS	32	5.19V	52	PS	72	NC
13	PS	33	0V	53	PS	73	0V
14	PS	34	5.06V	54	PS	74	7.23V
15	NC	35	0V/5.6V	55	PS	75	7.23V
16	NC	36	PS	56	0V	76	4.84V
17	NC	37	PS	57	5.22V	77	4.76V
18	4.78V	38	PS	58	5.22V	78	4.88V
19	5.18V	39	PS	59	4.81V	79	5.05V
20	NC	40	PS	60	5.22V	80	2.13V

MODE : 35Pin : DISC IN/DISC OUT

IC701

1	0V	8	13.99V
2	0.93V	9	NC
3	1.77V	10	5.2V
4	1.38V	11	NC
5	11.07V	12	1.31V
6	NC	13	1.31V
7	0V	14	1.37V

	E	C	B
Q207	8.94V	14.3V	9.54V
Q704	13.99V	7.54V	13.59V
Q802	9.12V	14.27V	9.72V
Q805	8.88V	0V	8.35V
Q806	14.12V	0V	14.11V
Q807	0V	14.1V	0V
Q808	14.01V	14.03V	13.38V
Q809	14.03V	14.03V	13.37V
Q810	0V	0V	7.02V
Q811	0V	0V	3.72V
○ Q812	0V	4.29V	0V
Q814	14.26V	14.18V	13.51V
Q815	0V	3.48V	5.2V
Q817	0V	0V	0.7V
Q818	4.81V	4.8V	0V
Q819	5.19V	14.26V	5.79V

	1	2	3	4	5
Q602	0V	8.91V	9V	5.21V	0V
Q603	NC	5V	5.23V	5.2V	0V
Q801	NC	14.25V	14.29V	5.17V	0V
Q803	NC	0V	14.28V	0V	0V
Q804	NC	14.14V	14.26V	3.49V	0V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : CD : Be Playing back the 2nd. Music of the Test CD (YEDS-18)
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

Notes : ○ : For CDE-7822R Model Only,
● : For CDE-7820R Model Only,
Others : Common.

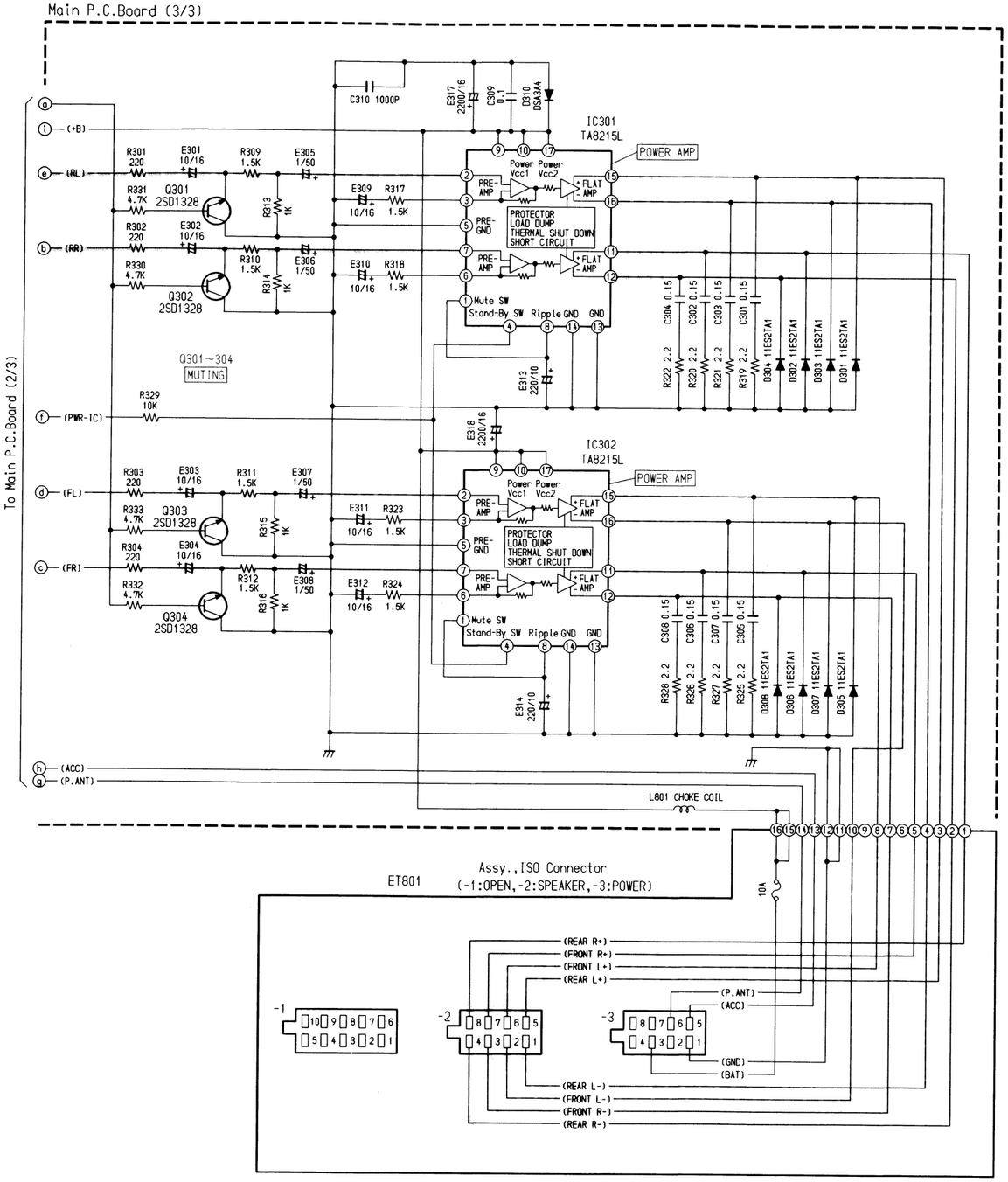
NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

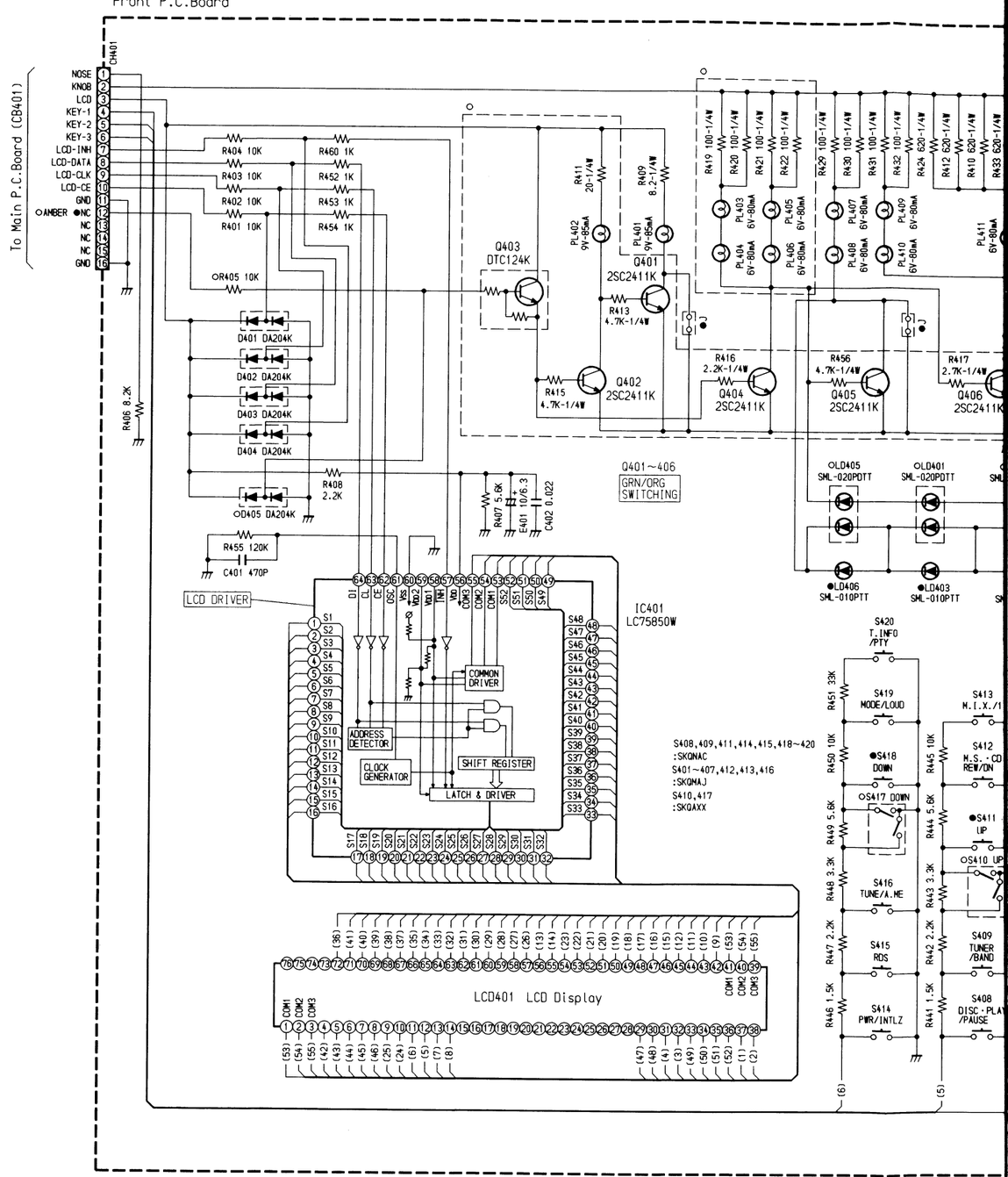
Schematic Diagram (3/4)

IC	IC301 IC302	IC401				
Transistor (Q)	Q301 Q302 Q303 Q304	Q403	Q402 Q401	Q404	Q405	Q406

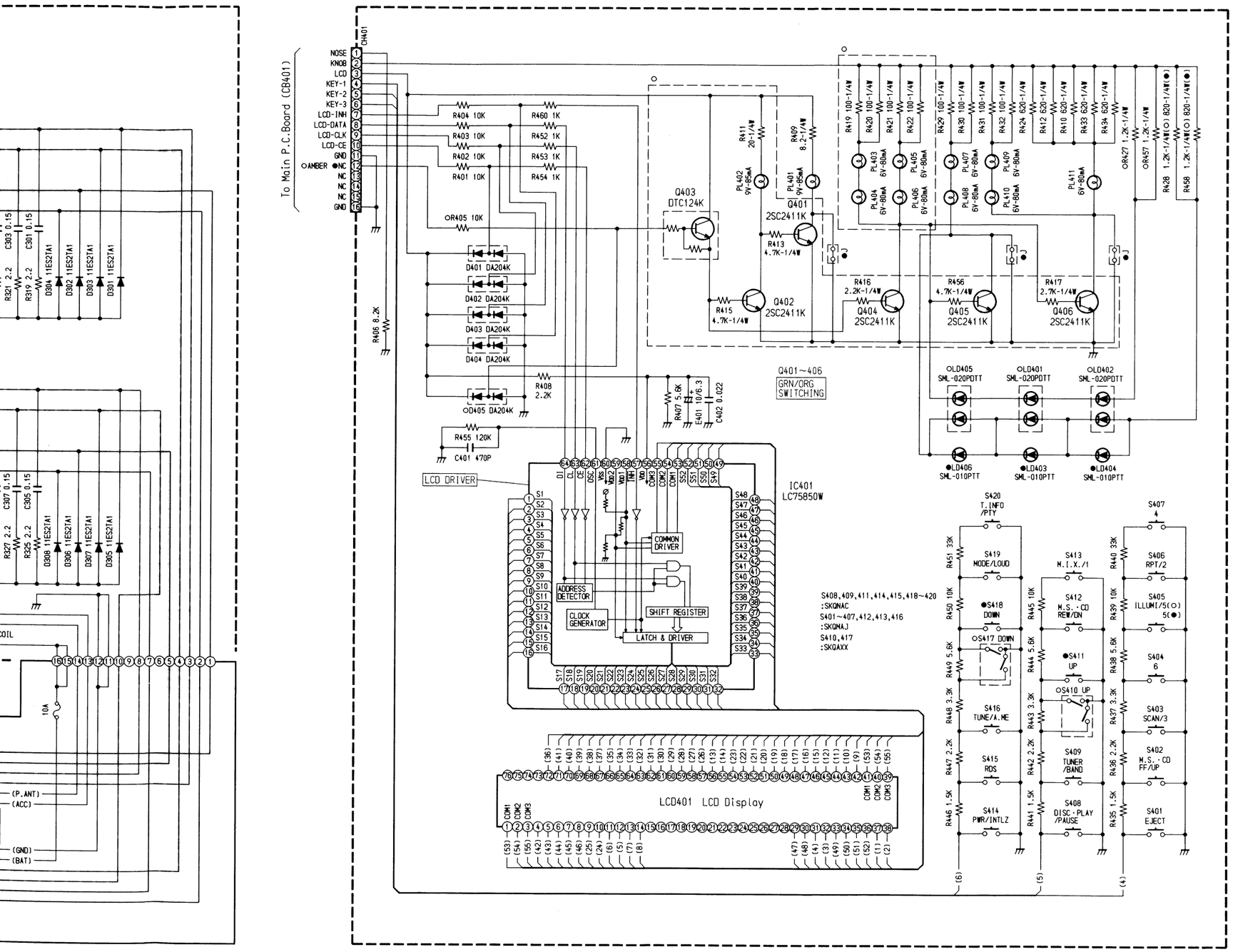
Main P.C.Board (3/3)



Front P.C.Board



	IC401				
Q403	Q402 Q401	Q404	Q405	Q406	



IC301, IC302

1	4.99V	10	14.27V
2	4.92V	11	PS
3	4.99V	12	PS
4	3.51V	13	0V
5	0V	14	0V
6	4.99V	15	PS
7	4.99V	16	PS
8	4.99V	17	14.27V
9	14.27V		

	E	C	B
Q301	0.03V	0.01V	0.72V
Q302	0.03V	0.01V	0.72V
Q303	0.03V	0.01V	0.72V
Q304	0.03V	0.01V	0.72V
○ Q401	0V	9.04V	0.27V
○ Q402	0V	0.27V	0.79V
○ Q403	3.4V	9.15V	4.74V
○ Q404	0V	0.3V	0.81V
○ Q405	0V	13.67V	0.32V
○ Q406	0V	13.67V	0.33V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : CD : Be Playing back the 2nd. Music of the Test CD (YEDS-18)
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

Notes : ○ : For CDE-7822R Model Only,
● : For CDE-7820R Model Only,
Others : Common.

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

CDE-7822R
CDE-7820R

Schematic Diagram (4/4)

IC	IC1103	IC1507	IC1102	IC1201	IC1101	IC
Transistor (Q,PT)	PT1501 PT1502 PT1503 PT1504 PT1505 Q1103 Q1502 Q1501 Q1503 Q1508		Q1102 Q1112 Q1115 Q1113			Q1116

LED P.C.Board

DP-Main P.C.Board

Pick Up Unit (HD1201)

LASER DIODE

M1303 SLED MOTOR

TRACKING COIL

FOCUS COIL

M1302 SPINDLE MOTOR

S1302 LIMIT SW

M1301 LOADING MOTOR

S1301 CAM END SW

IC1103 BA6790FP

IC1102 TA8191F RF AMP/SERVO CONTROL

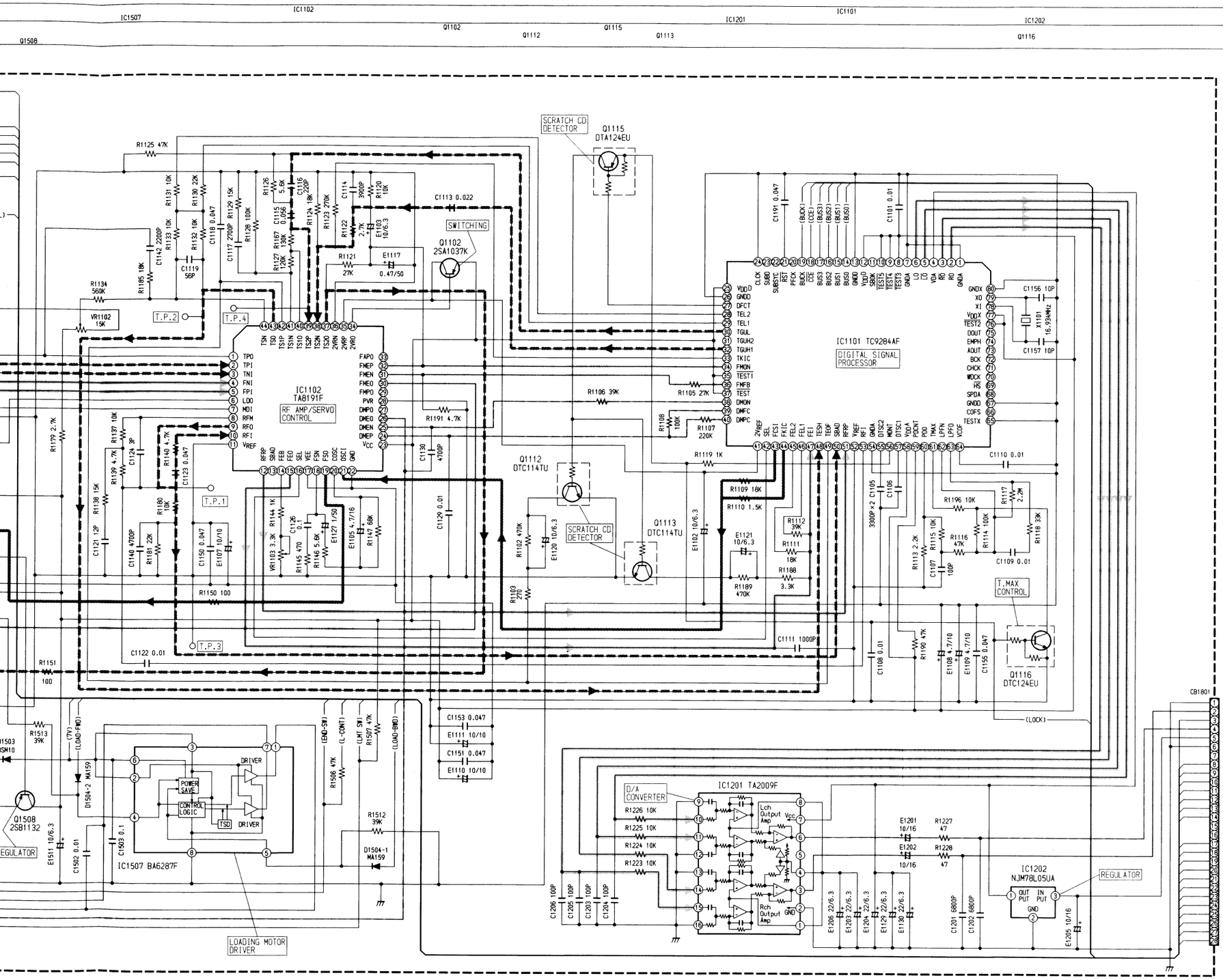
IC1101 TC9284AF DIGITAL SIGNAL PROCESSOR

IC1201 TA2009F D/A CONVERTER

IC1507 BA6287F

TRACKING/FOCUS/SLED/SPINDLE SERVO DRIVER

LOADING MOTOR DRIVER



IC1101

1	0V	21	5V	41	4.3V	61	2.2V
2	2.4V	22	PS	42	5V	62	2.2V
3	2.6V	23	PS	43	2.6V	63	2.2V
4	5V	24	0V	44	2.6V	64	2.1V
5	2.6V	25	5V	45	2.2V	65	0V
6	2.4V	26	0V	46	2.2V	66	PS
7	0V	27	5V	47	2.2V	67	0V
8	5V	28	2.2V	48	2.2V	68	0.1V
9	5V	29	2.2V	49	2.2V	69	5V
10	5V	30	2.2V	50	2.5V	70	PS
11	PS	31	0V	51	2.4V	71	PS
12	5V	32	2.2V	52	2.2V	72	PS
13	0V	33	2.2V	53	PS	73	PS
14	PS	34	2.2V	54	0V	74	0.1V
15	PS	35	5V	55	2.6V	75	0.1V
16	PS	36	2.2V	56	5V	76	5V
17	PS	37	5V	57	2.6V	77	5V
18	PS	38	2.2V	58	5V	78	PS
19	PS	39	PS	59	5V	79	PS
20	PS	40	PS	60	PS	80	0V

IC1102

1	1.7V	23	5V
2	2V	24	PS
3	2V	25	2.1V
4	2V	26	PS
5	2V	27	PS
6	3.9V	28	2.1V
7	0.1V	29	2.1V
8	2.1V	30	2V
9	PS	31	2V
10	PS	32	2.1V
11	2.1V	33	PS
12	PS	34	4.4V
13	2.7V	35	4.3V
14	2V	36	2.1V
15	PS	37	PS
16	4.9V	38	2V
17	0V	39	2V
18	PS	40	PS
19	PS	41	2V
20	PS	42	2.1V
21	2.4V	43	2.1V
22	0V	44	2.1V

IC1103

1	2.8V	15	5.8V
2	3V	16	2.1V
3	2.2V	17	3.1V
4	2.2V	18	2.6V
5	5.6V	19	2V
6	5.1V	20	2.2V
7	6.3V	21	6.2V
8	0V	22	6.2V
9	2.2V	23	2.1V
10	2.4V	24	2.2V
11	3.2V	25	2.1V
12	2.6V	26	2.7V
13	0V	27	3V
14	5.8V	28	0V

IC1201

1	2.5V	9	0V
2	0V	10	2.4V
3	2.5V	11	2.6V
4	2.5V	12	0V
5	NC	13	0V
6	2.5V	14	2.6V
7	5V	15	2.4V
8	2.5V	16	0V

IC1202

1	9V
2	0V
3	5V

IC1507

1	0V	5	0V
2	7.1V	6	7.1V
3	7.1V	7	0V
4	0V	8	0V

	E	C	B
Q1102	5V	4.5V	4.3V
Q1103	4.6V	4V	1.8V
Q1112	2.2V	0V	2.2V
Q1113	2.2V	0V	2.2V
Q1115	5V	5V	0V
Q1116	2.1V	5V	2.1V
Q1501	14V	14V	0V
Q1502	0V	0V	14V
Q1503	0V	0V	0V
Q1508	6.3V	5.6V	5.1V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : CD : Be Playing back the 2nd. Music of the Test CD (YEDS-18)
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

R-ch Signal Line
L-ch Signal Line
CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Sled Servo Signal Line
Spindle Servo Signal Line

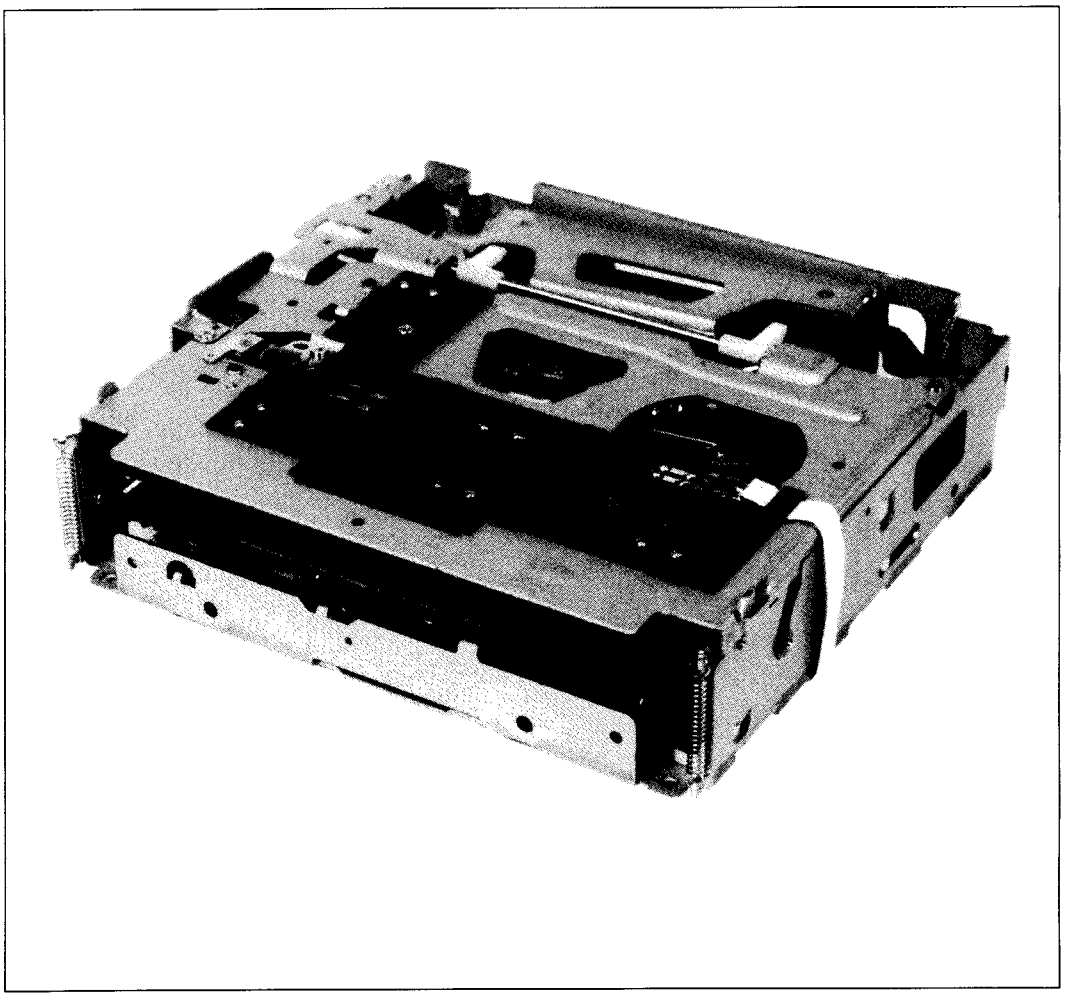
NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

ALPINE®

SERVICE MANUAL

CD Player Mechanism



DP-H SERIES

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Mechanism Operation

<DP24H010 three side diagrams>

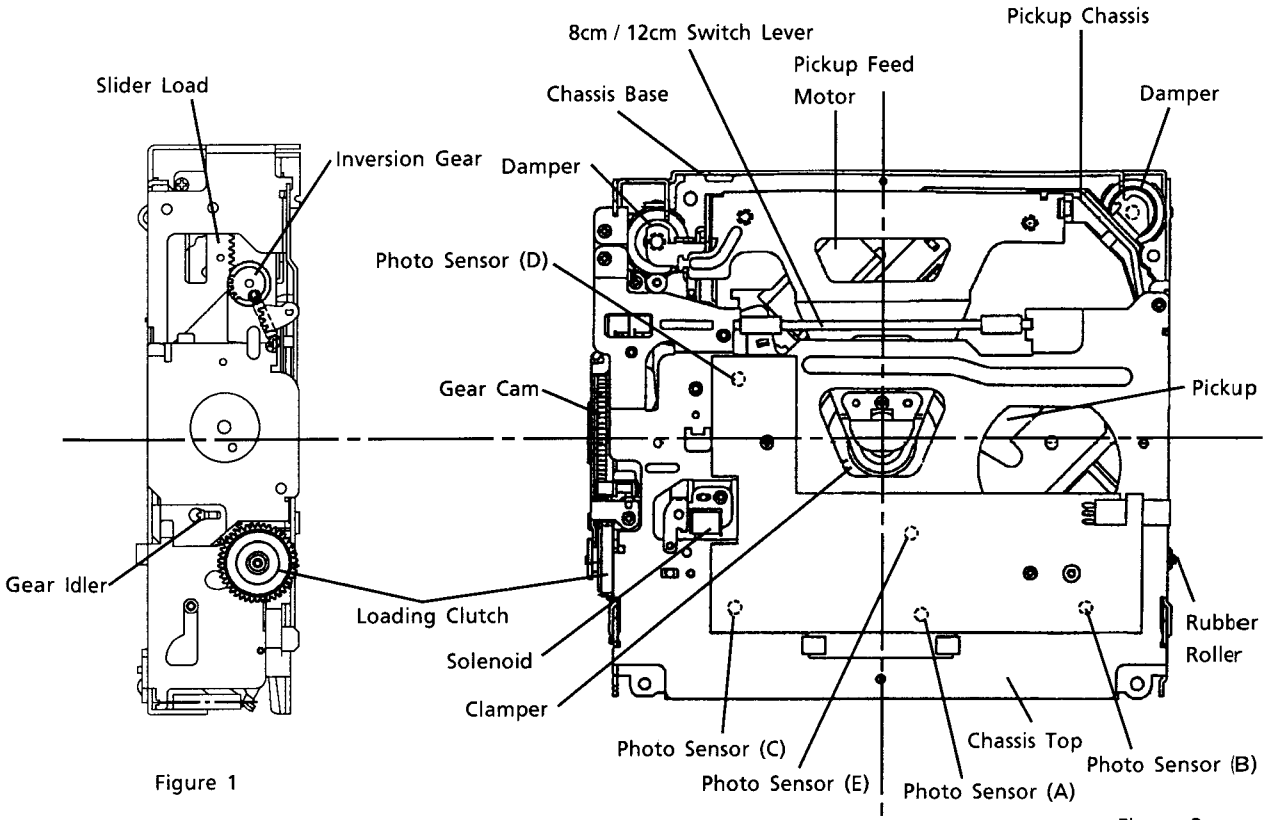


Figure 1

Figure 2

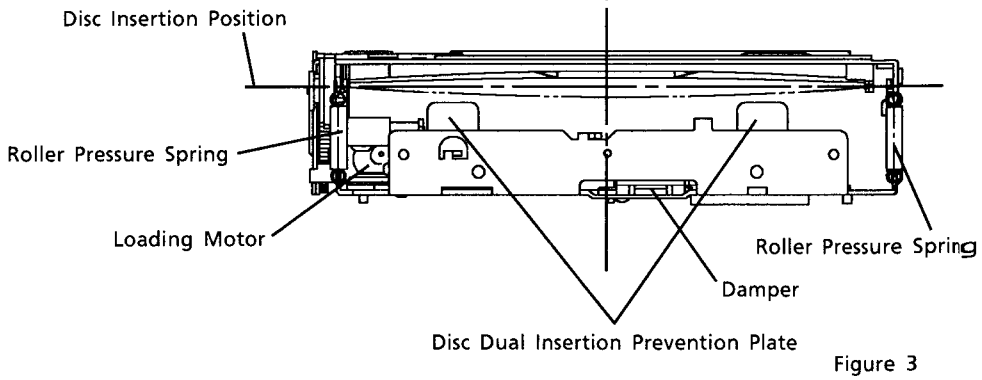


Figure 3

<DP24H010 Photo Sensor location diagram>

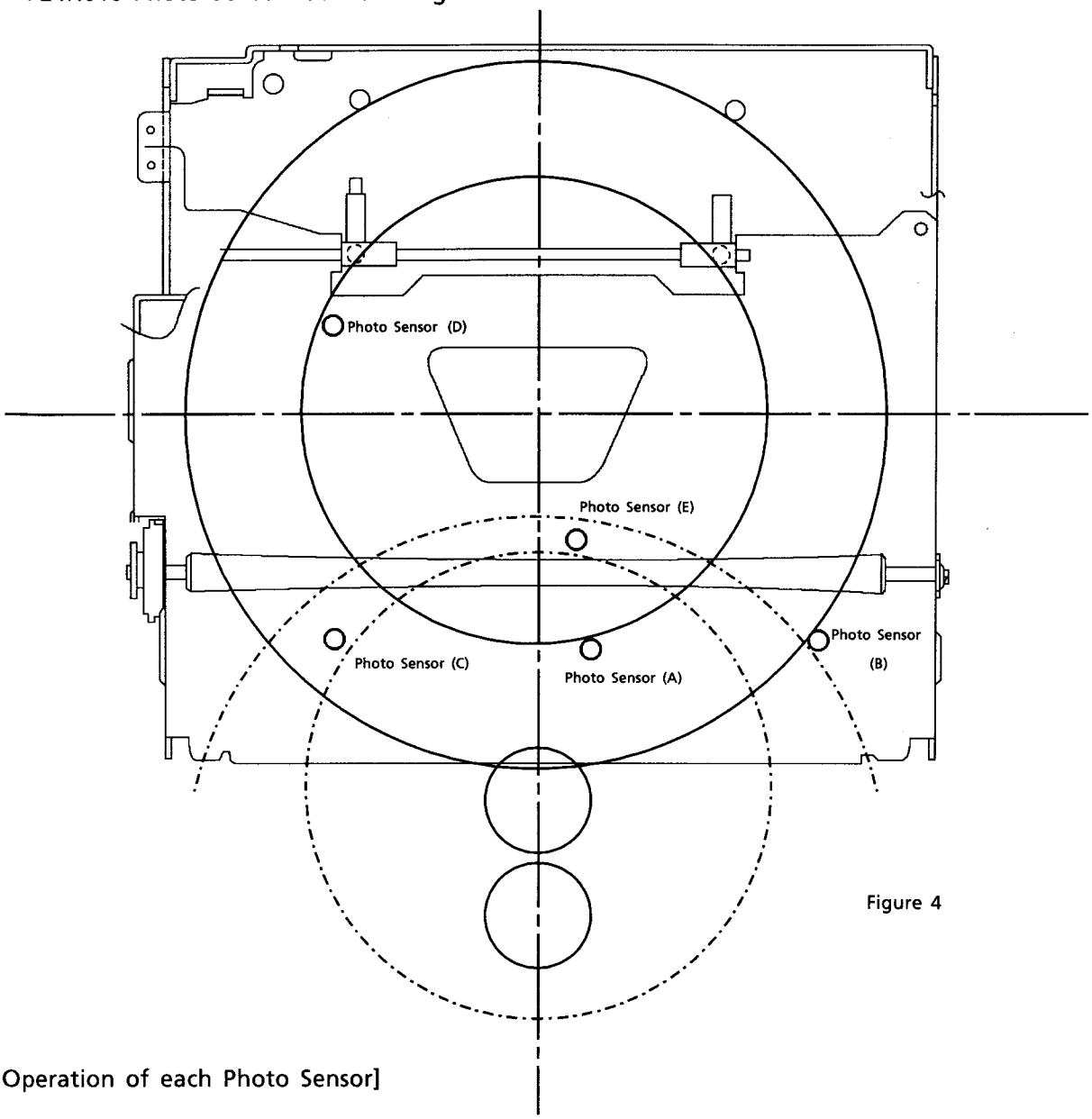


Figure 4

[Operation of each Photo Sensor]

1. Photo Sensor (A) ..... ① Detects insertion of a 8cm Disc or 12cm Disc.
   ② Detects Loading end position of the 8cm Disc.
2. Photo Sensor (B) ..... ① Identifies either 8cm Disc or 12cm Disc by working with the Photo Sensor (C).
   ② Detects Loading end position of the 12cm Disc.
   ③ Detects eject position of the 12cm Disc.
   ④ Detects a reloading of the 12cm Disc.
3. Photo Sensor (C) ..... ① Detects insertion of the 8cm Disc.
   ② Detects eject position of the 8cm Disc.
   ③ Identifies either 8cm Disc or 12cm Disc by working with the Photo Sensor (B).
4. Photo Sensor (D) ..... ① Detects loading end of the 8cm Disc.
   ② Detects that the 12cm Disc reaches the position at which it touches the stopper pin.
5. Photo Sensor (E) ..... ① Detects reloading of the 8cm Disc.

Function	Sequence	Operation	Illustration
12cm Disc pull-in operation	①	When the disc reaches position ①, the Photo Sensor (A) is interrupted and the disc insertion is detected. The Loading Motor runs in forward direction. As the disc moves further, it is pulled in by the Rubber Roller.	Figure 5
	②	When the disc reaches position ②, both the Photo Sensors (B) and (C) are interrupted at the same time, thereby identifying the disc is of 12cm type. The Lock Lever is opened.	
	③	When the disc reaches position ③, it touches top of the Switch Lever and the pin is raised by driving force of the Rubber Roller.	
	④	When the disc reaches position ④ an outer edge of the disc touches the pin which determines the 12cm Disc position and the disc position is set to the chucking center.	
	⑤	It is detected that the disc position has been determined with the Photo Sensor (B) uninterrupted. Then the Solenoid is powered.	

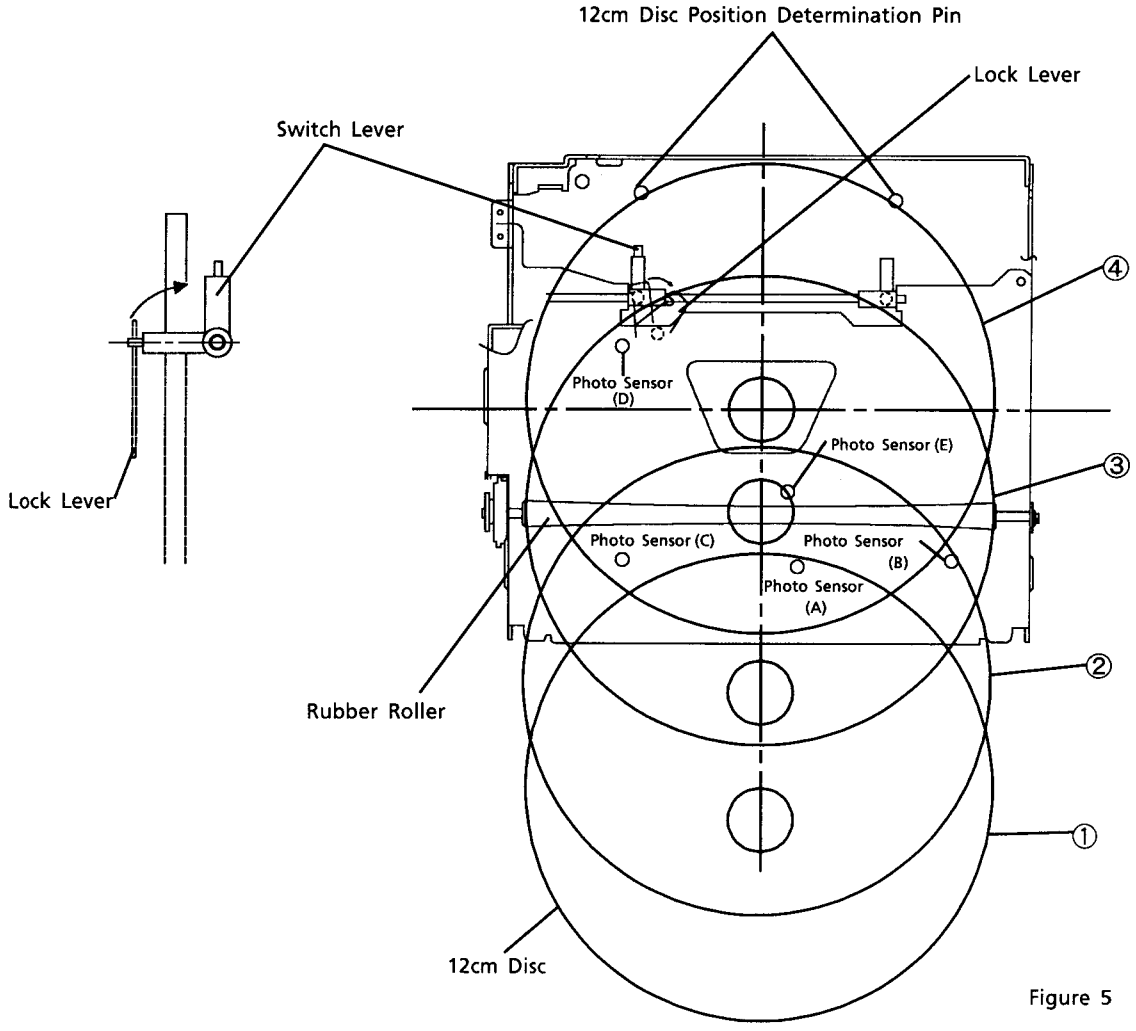


Figure 5

Function	Sequence	Operation	Illustration
8cm Disc pull-in operation	①	When the disc reaches position ①, the Photo Sensor (A) is interrupted and the Loading Motor rotates in forward direction, thereby the disc is pulled in by the Rubber Roller.	Figure 6
	②	Since distance between the Photo Sensors (B) and (C) is larger than the diameter of an 8cm Disc, both of the Photo Sensors (B) and (C) can not be interrupted at the same time when the 8cm Disc is inserted at either left or right side. Accordingly, the Lock Lever does not open until the disc reaches position ②, thus the position is determined directly.	
	③	With the Photo Sensor (D) interrupted and the Photo Sensor (A) uninterrupted, determination of the disc position is detected and the Solenoid is powered.	
	④	After completion of the chucking operation, the Lock Lever is opened and the Switch Lever is moved upward by 90 degrees by a force of Inversion Spring.	

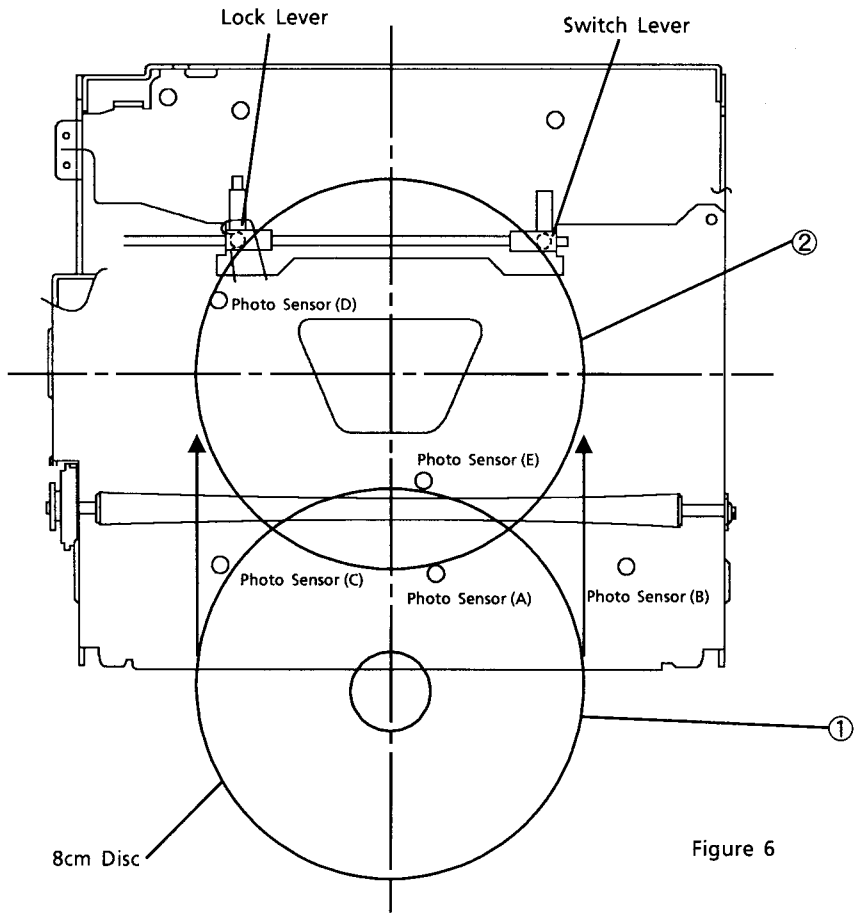


Figure 6

Function	Sequence	Operation	Illustration
Roller drive system operation	①	Loading Motor rotates.	Figure 7
	②	Worm gear of the Motor Shaft rotates and Worm Wheel transfers driving force to the Idler Gear.	
	③	Idler Gear (big) transfers the driving force to the Loading Clutch.	
	④	The Loading Clutch limits the driving torque within 45gcm~85gcm and transfers it to the Rubber Roller.	
	⑤	The Rubber Roller rotates, thereby pulling in the disc.	

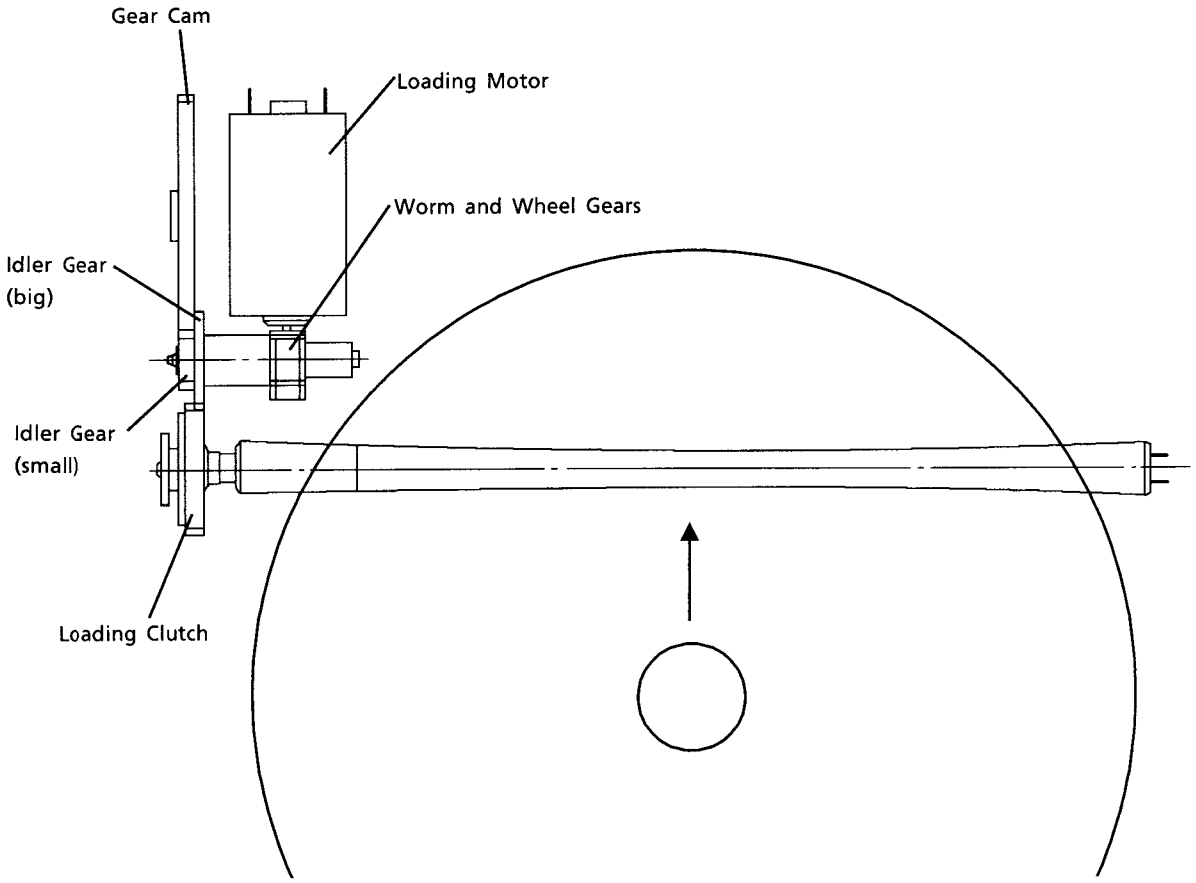
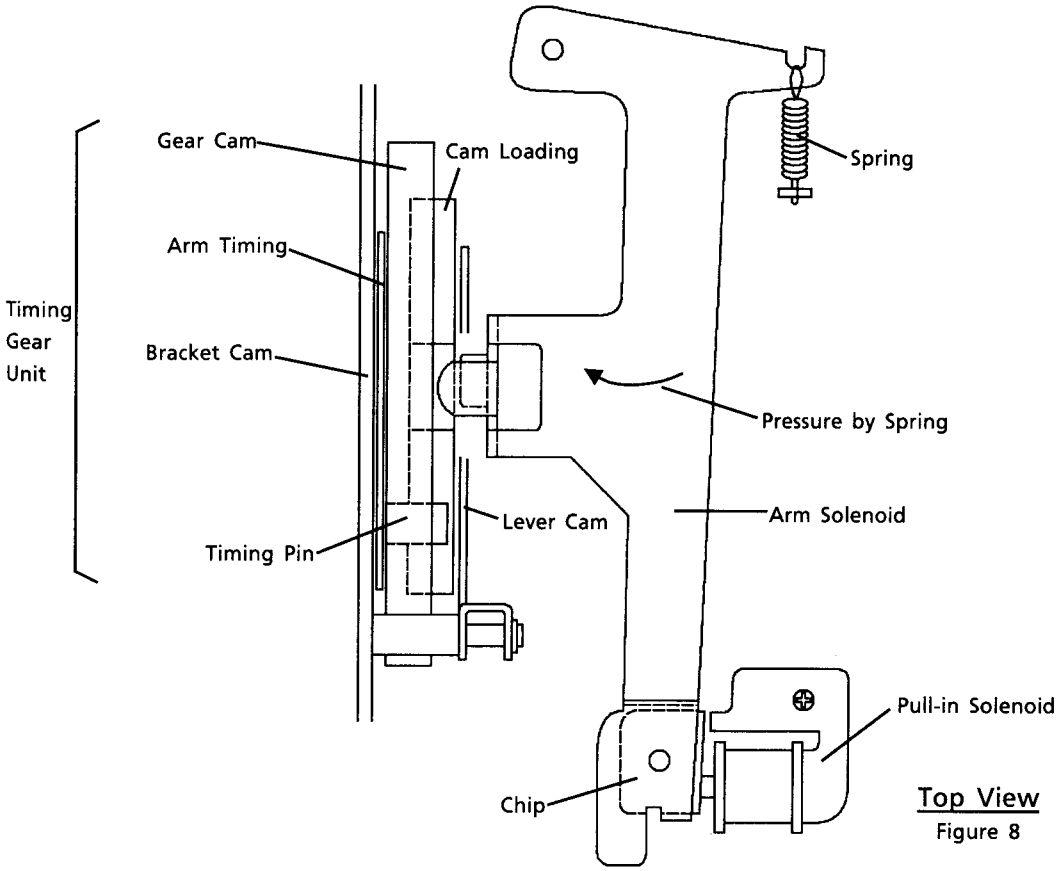
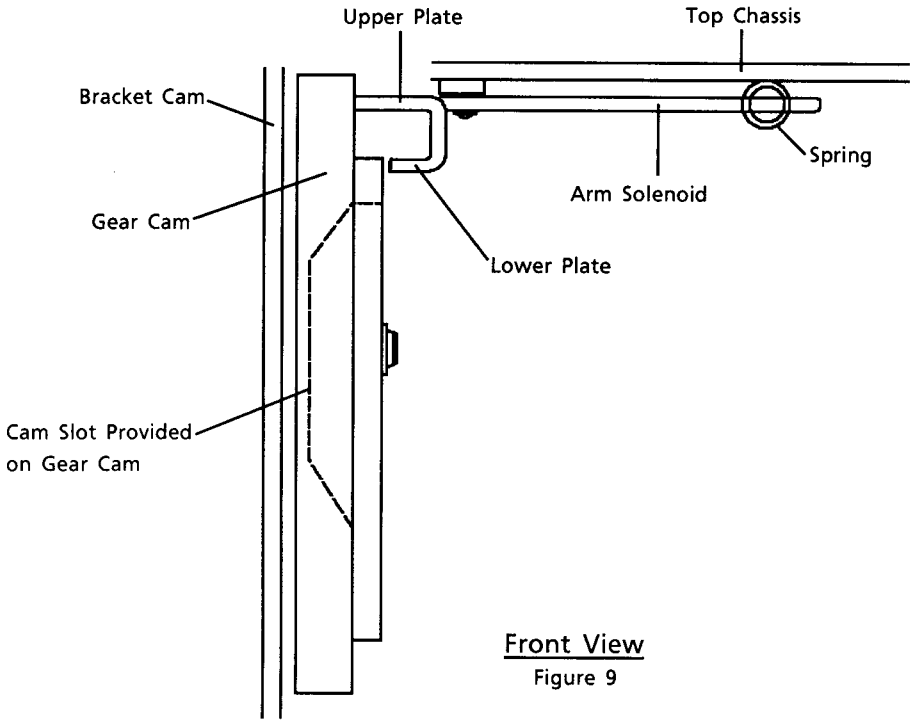


Figure 7

<Structures around Loading Gears>



Top View
Figure 8



Front View
Figure 9

Function	Sequence	Operation	Illustration
Operations of Timing Gear unit in disc pull-in (Solenoid not powered) operation	①	The Gear Cam rotates in clockwise direction and the Timing Pin comes near the coupling Slot of the Gear Cam.	Figure 10
	②	The Timing Cam is going to enter the Coupling Slot but it is interrupted by a Lower Plate of the Arm Solenoid entered left side along the Cam Slot, so it passes away upper side.	Figure 11
	③	When the Timing Pin passes away the Coupling Slot, the Arm Solenoid is pressed and returned to right side as the Cam Slot does not exist. The Chip and Solenoid touch at this position.	Figure 12

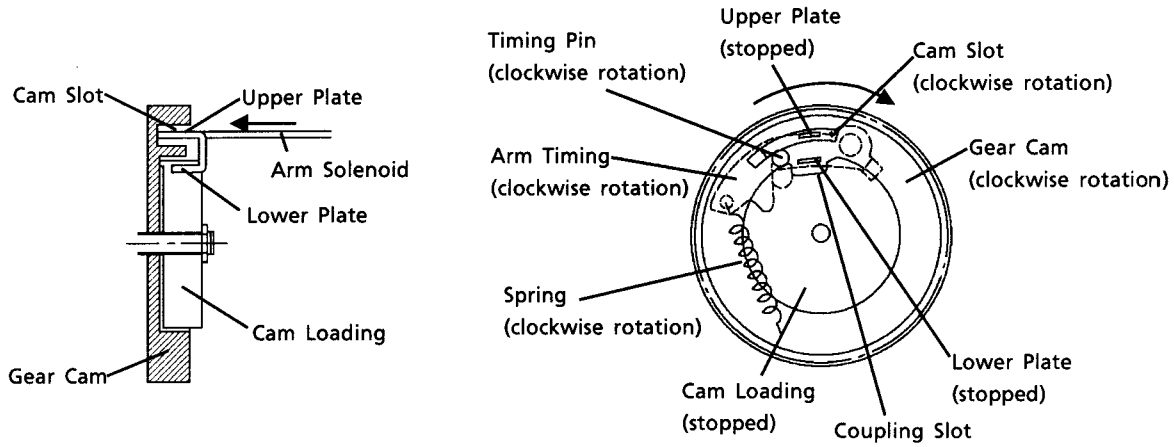


Figure 10

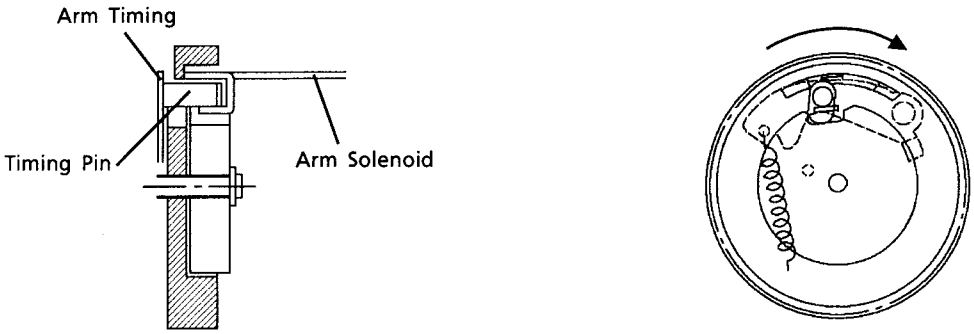


Figure 11

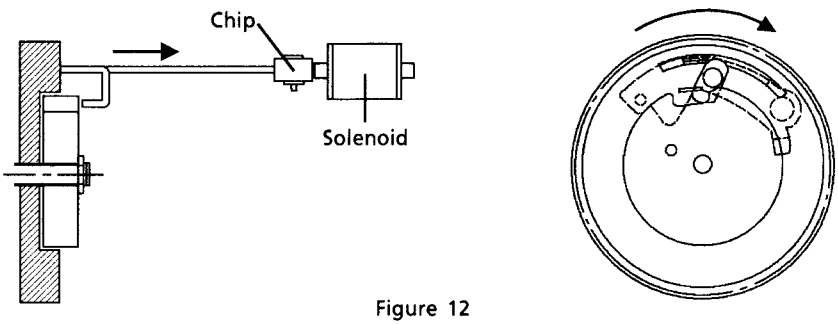
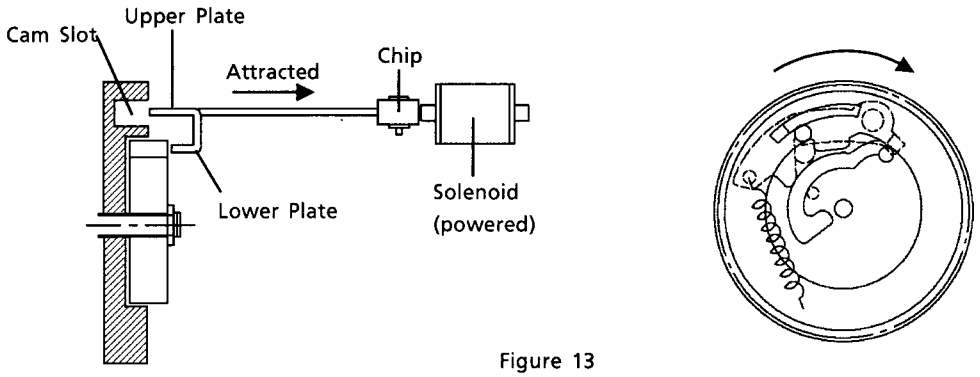


Figure 12

Function	Sequence	Operation	Illustration
Operations of Timing Gear unit in disc chucking (Solenoid powered)	①	The Gear Cam rotates clockwise and the Timing Pin comes near the Coupling Slot. But the Arm Solenoid does not move to left side as the Solenoid is attracting if the Cam Slot moves to the Upper Plate position.	Figure 13
	②	As the arm Solenoid does not move to left side, the Timing Pin is dropped into the Coupling Slot by a force of the Spring without it is interrupted by the Lower Plate.	Figure 14
	③	When the Timing Pin enters the Coupling Slot completely, both the Gear Cam and the Cam Loading start rotation clockwise, thus the chucking operation starts.	Figure 15



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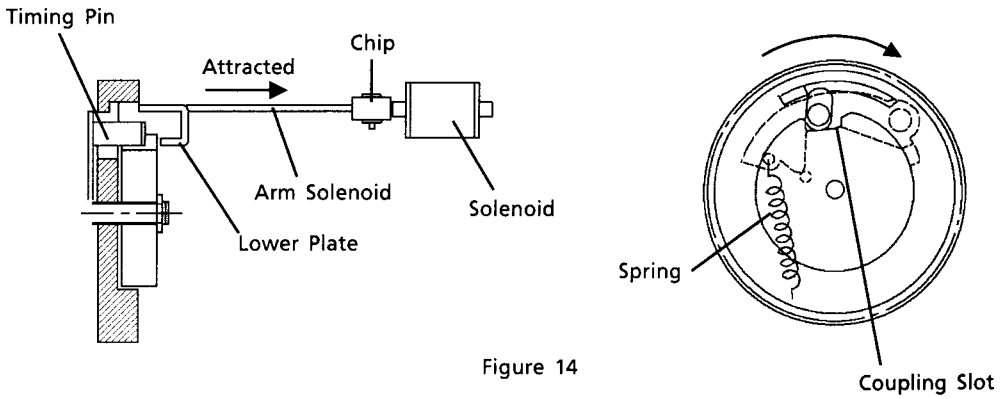

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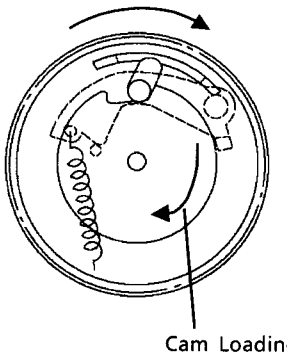
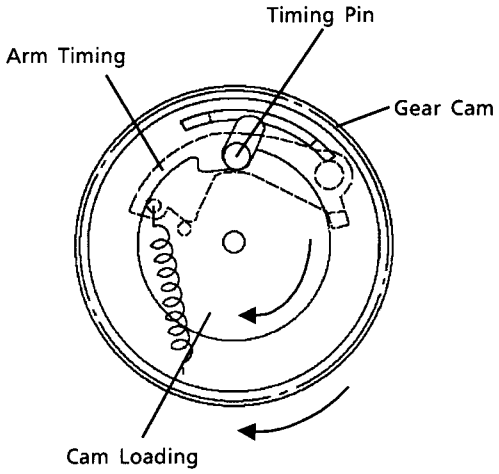


Figure 15

Function	Sequence	Operation	Illustration
Coupling release operation of the Gear Cam and Cam Loading in chucking operations	①	The Gear Cam and the Cam Loading are coupled with the Timing Pin and they begin to rotate clockwise as a unit.	Figure 16
	②	When they rotate by 320 degrees, the chucking operating completes.	Figure 17
	③	The Remove Pin and the Arm Timing Pin touch at this position and the Arm Timing is raised.	Figure 18
	④	When the Timing Pin is disengaged from the Coupling Slot, only the Gear Cam rotates idly.	Figure 19



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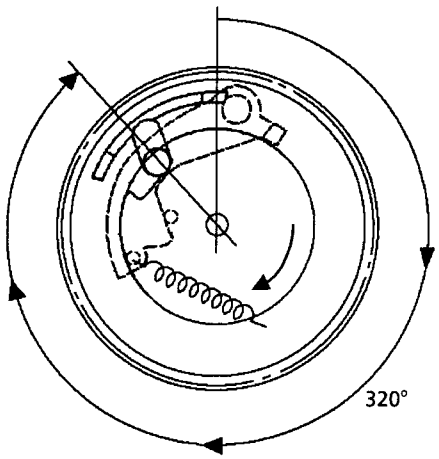
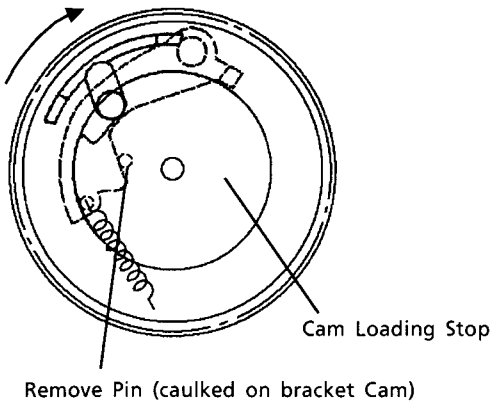


Figure 17



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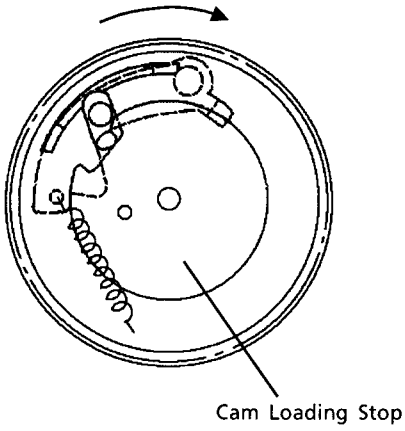


Figure 19

Function	Sequence	Operation	Illustration
Slide feed operation by rotation of Cam Loading in chucking operation	①	Chucking operation start position / the Cam Loading is stopped when the Pin caulked on the Lever Cam drops onto a recessed section of the Cam Slot.	Figure 20
	②	The Pin rises on a protruded section as the Cam Loading rotates clockwise.	Figure 21
	③	The Pin passes over the protruded section and enters the Cam Slot.	Figure 22
	④	The Lever Link is rotated by the slanted section of the Cam Slot and the Slide Load is fed by 5mm.	Figure 23
	⑤	When the Pin enters the Concentric Circle Section of the Cam Slot, the Lever Link stops rotation and only the Cam Loading rotates and enters the U Slot.	Figure 24
	⑥	When the Pin enters the U Slot, the Lever Link rotates again and the Slider Load is further fed by 12mm (in total 17mm). This position is the end position for the Slider Load and the Cam Loading stops at the position rotated by 320 degrees. (The Timing Pin is disengaged from the Coupling Slot.)	Figure 25

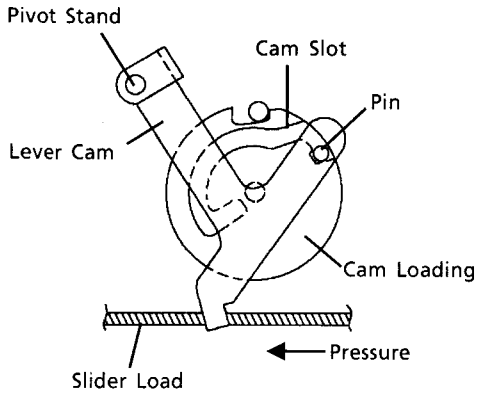
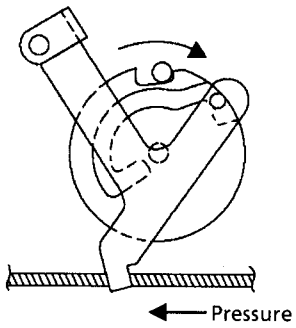


Figure 20



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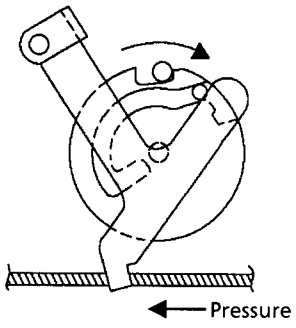

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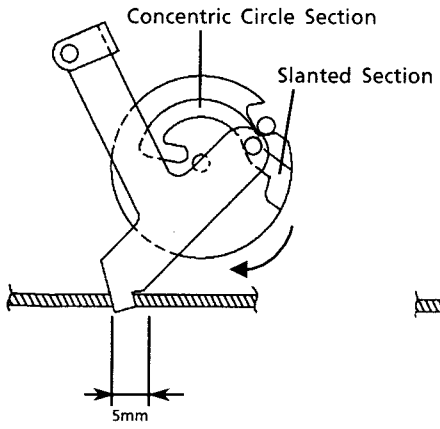


Figure 23

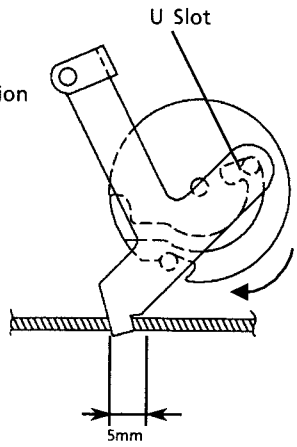


Figure 24

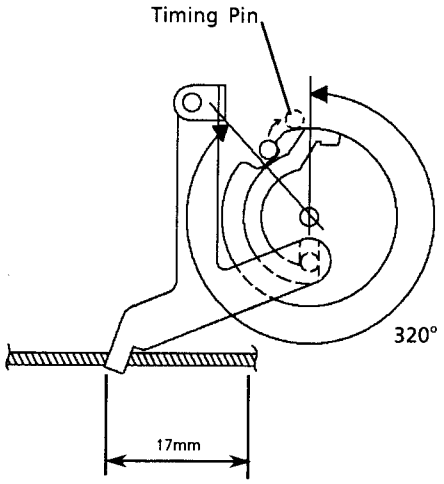


Figure 25

Function	Sequence	Operation	Illustration
Chucking operation (drive block is not shown)	①	The Slider Load moves downward by 17mm with rotation of the Lever Link. Following operations are carried out in connection with the motion of the Slider Load.	Figure 26 ①
	②	The Arm Lock (R) rotates clockwise and disengages from the Drive Unit.	Figure 26 ②
	③	The Arm Link (L) rotates countercLockwise and disengages from the Drive Unit.	Figure 26 ③
	④	The Lever Link is slid leftward.	Figure 26 ④
	⑤	The Stud Lock (F) disengages from the Drive Unit.	Figure 26 ⑤
	⑥	The Arm Lock (F) disengages from the Drive Unit.	Figure 26 ⑥
	⑦	The Arm Link (R) rotates cLockwise.	Figure 26 ⑦
	⑧	The Slider Lock moves downward and the Lock section at the end disengages from the Drive Unit.	Figure 26 ⑧

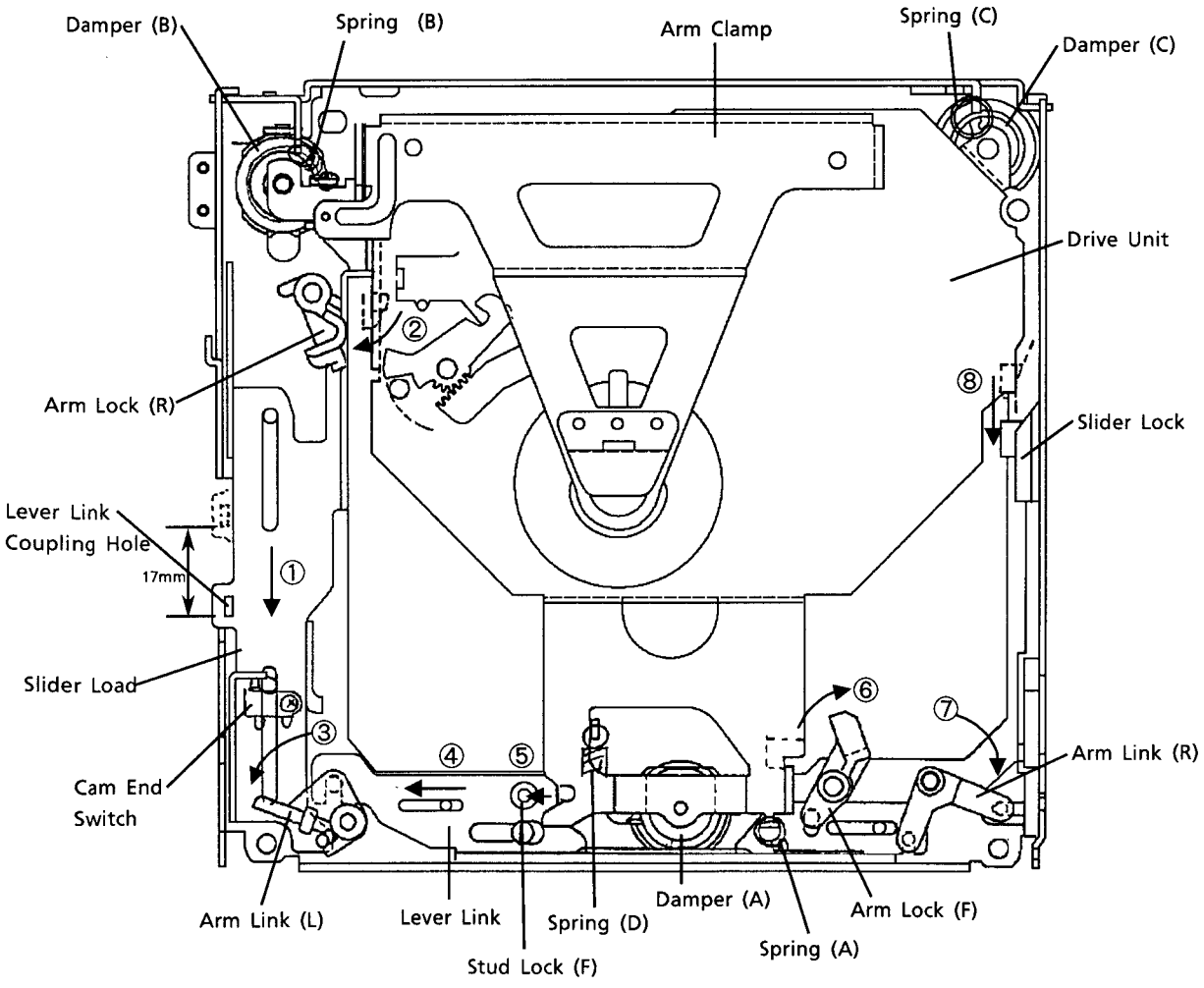
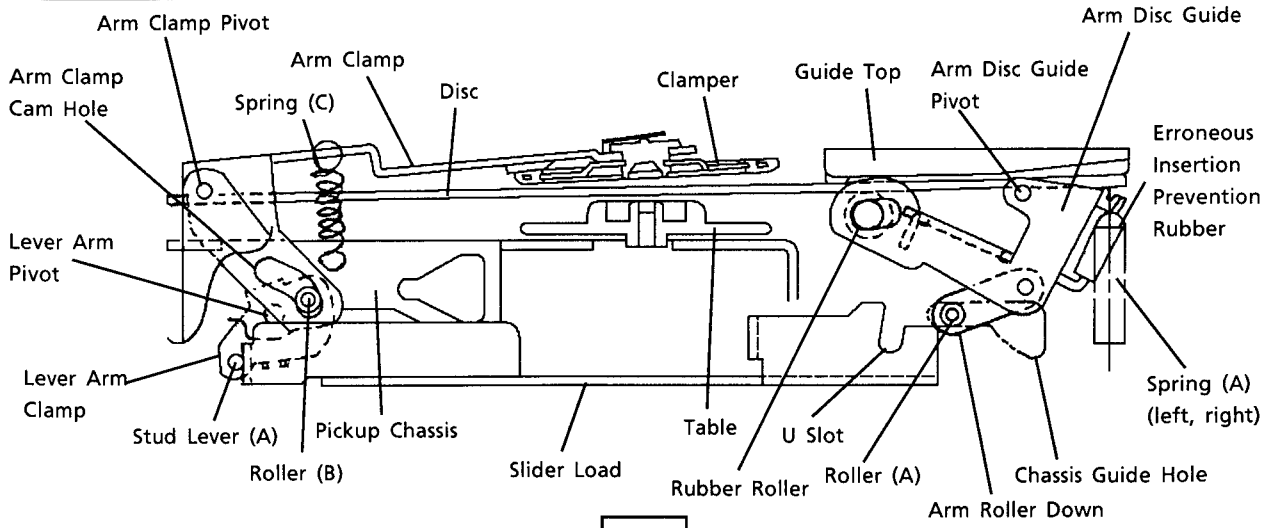


Figure 26

Function	Sequence	Operation	Illustration
Chucking operation (Disc Clamp)	①	When the chucking operation starts, the Slider Load moves rightward by 17mm. Following operations are carried out in relation to the motion of the Slider Load.	Figure 27 ①
	②	As the protruded Section of Slider Load pressing the Stud Lever (A) leftward moves rightward, entire of the Lever Arm Clamp is rotated counterclockwise by force of the Spring (B).	Figure 27 ②
	③	The Roller (B) provided on the Lever Arm Clamp rotates counterclockwise in the Arm Clamp Cam Hole. This motion guides the Arm Clamp and the Arm Clamp is rotated clockwise by force of the Spring (C).	Figure 27 ③
	④	Top of the Arm Clamp lowers and the Clamper drops downward.	Figure 27 ④
	⑤	The U Slot of the Slider Load presses the Roller (A) and the Roller (A) moves rightward along to the chassis guide hole.	Figure 27 ⑤
	⑥	This motion of the Roller (A) is transferred to the Arm Disc Guide through the Arm Roller Down and the Arm Disc Guide rotates counterclockwise and the Rubber Roller moves downward.	Figure 27 ⑥
	⑦	Erroneous Insertion Prevention Rubber provided on the Arm Disc Guide covers the disc Insertion Slot.	Figure 27 ⑦

Chucking start



Chucking end

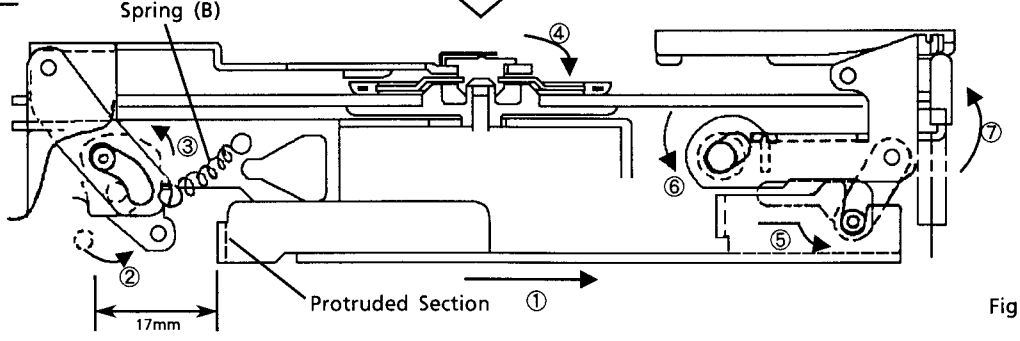


Figure 27

Function	Sequence	Operation	Illustration
Pickup feed operation	①	The Sled Motor rotates, the speed is reduced by the Motor Gear, Middle Gear and Gear Screw, and the Shaft Screw rotates.	Figure 28
	②	The Spring nut engaging with the Shaft Screw is fed to inner or outer side by the rotation of the Shaft Screw, and the Pickup moves along to two Shafts.	

Bottom View

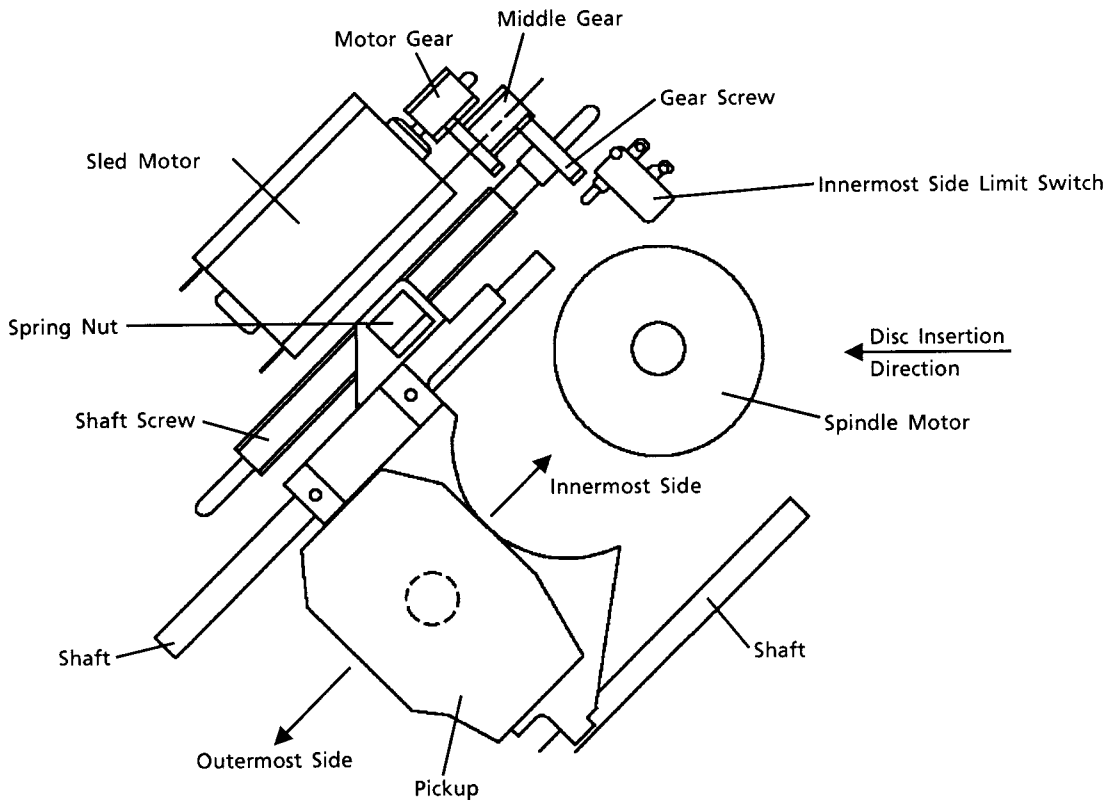


Figure 28

Function	Sequence	Operation	Illustration
Disc eject operation	①	12cm / 8cm Disc position during playback. When the eject button is pushed, and the Photo Sensor (C) is interrupted, it is determined that a 12cm Disc is loaded. On the other and if it is not interrupted it is determined that an 8cm Disc is loaded, and the eject operation starts.	Figure 29 ①
	②	Releasing operations of the Rubber Roller, Clamper and Drive Lock are carried out in reverse order as those in the chucking operations. In this case, Switch Pin returning operation is added. With this operation, the Switch Pin is returned to vertical direction and its top drops onto the position determination slot of the Drive Unit.	Figure 29 ②
	③	12cm Disc is stopped when the eject position is detected with the Photo Sensor (B) not interrupted.	Figure 29 ③
	④	8cm Disc is stopped when the eject position is detected with the Photo Sensor (C) not interrupted.	Figure 29 ④
	⑤	The Lever Pin Lock performs Switch Pin lock operation and returns to the initial status.	Figure 29 ⑤

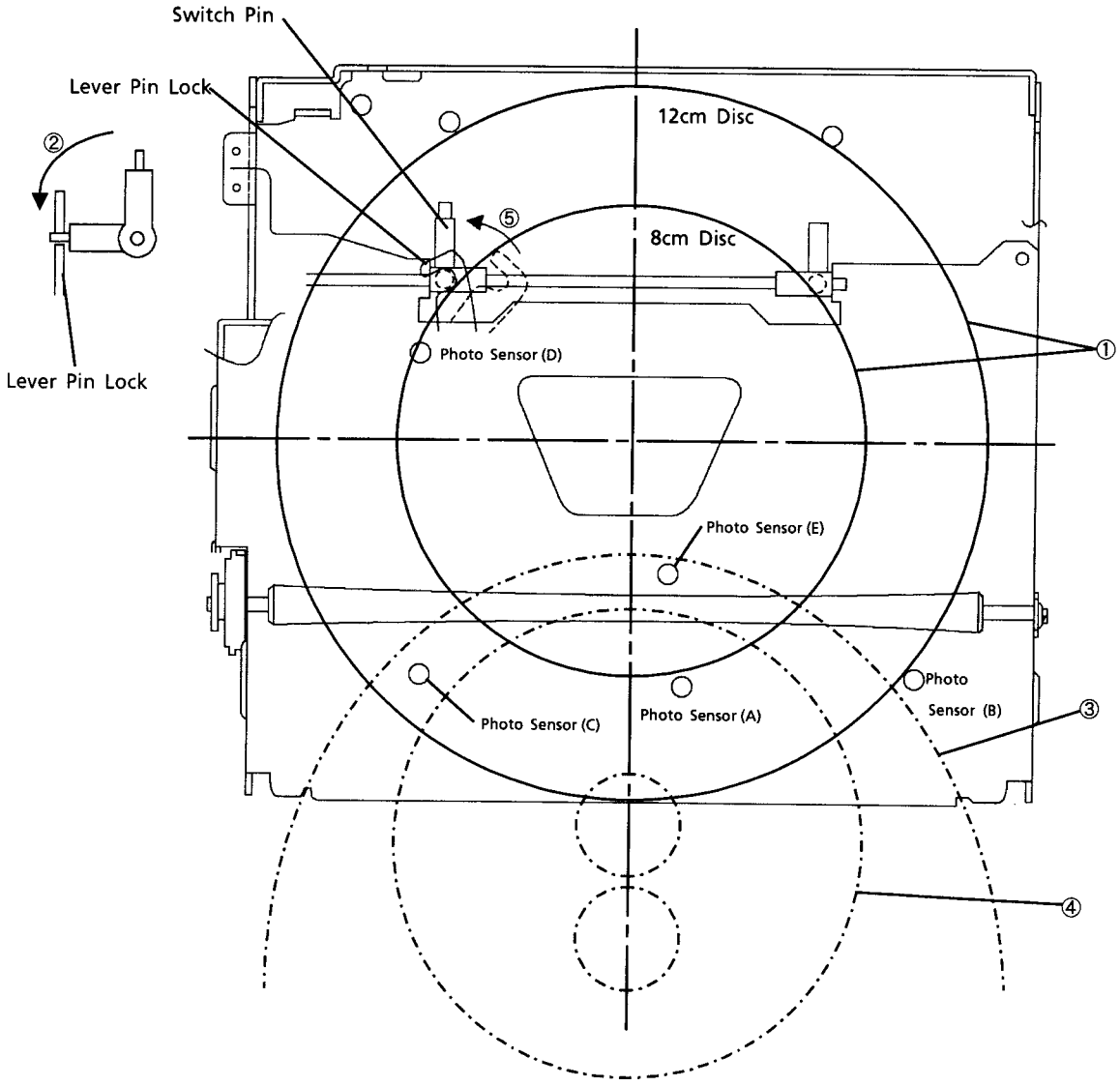


Figure 29

Function	Sequence	Operation	Illustration
Operation of Gear Cam and Cam Loading in eject operations	①	When the eject button is pressed, the Loading Motor rotates in reverse direction from the direction as in the Loading operation, and the Gear Cam rotates counterclockwise through the a Gear.	Figure 30
	②	The Timing Pin drops in the Coupling Slot of the Cam Loading and the Cam Loading and the Gear Cam coupled together start to rotate.	Figure 31
	③	After rotation of 320 degrees, top of the Arm Timing touches the Remove Pin.	Figure 32
	④	And the top of the Arm Timing is raised by the Remove Pin, and the Arm Timing is rotated clockwise. Then, the Timing Pin begins to come out from the Coupling Slot.	Figure 33
	⑤	The Timing Pin comes out from the Coupling Slot, the Cam Loading stops, and only the Gear Cam rotates idly.	Figure 34

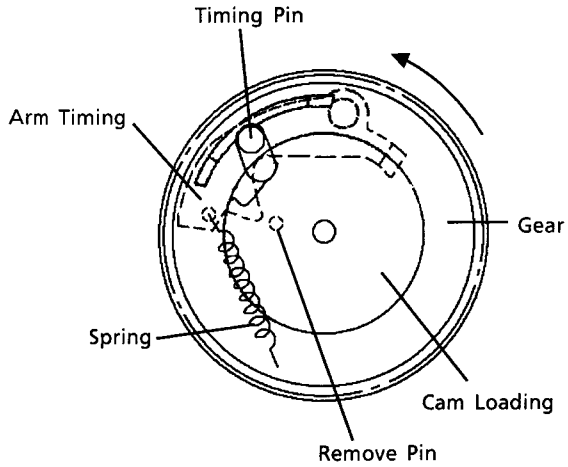
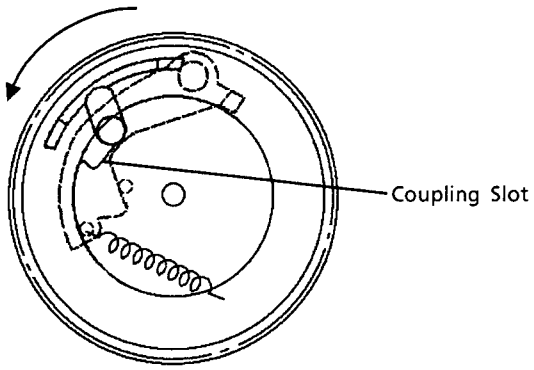


Figure 30



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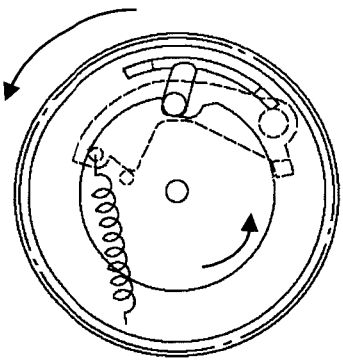

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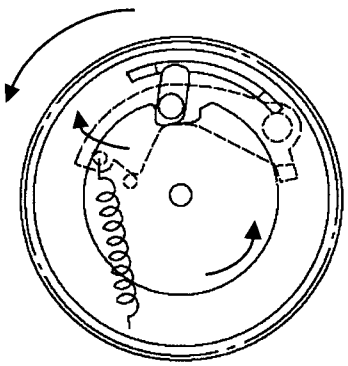


Figure 33

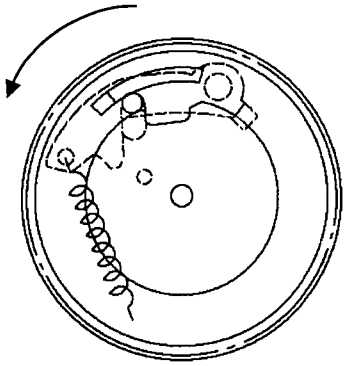


Figure 34

Function	Sequence	Operation	Illustration
Eject operation (Switch Lever returning)	①	The eject start position is located at right of the Rack Gear (A) and the Rack and the Gear (A) are engaged when the Slider Load moves leftward. ··· ⓒ	Figure 36
	②	The Gear (B) and the Gear (C) start to engage when the Rack is fed by 12mm. ··· ⓑ	
	③	The eject operation completes when the Rack moves by 17mm. The Gear (A) returns to the original position by force of the Spring. ··· ⓒ The Gear (C) separates from the Gear (B). ··· ⓑ The Switch Lever rotates and returns to the vertical position and fixed at that position by force of the Inversion Spring. ··· ⓐ	

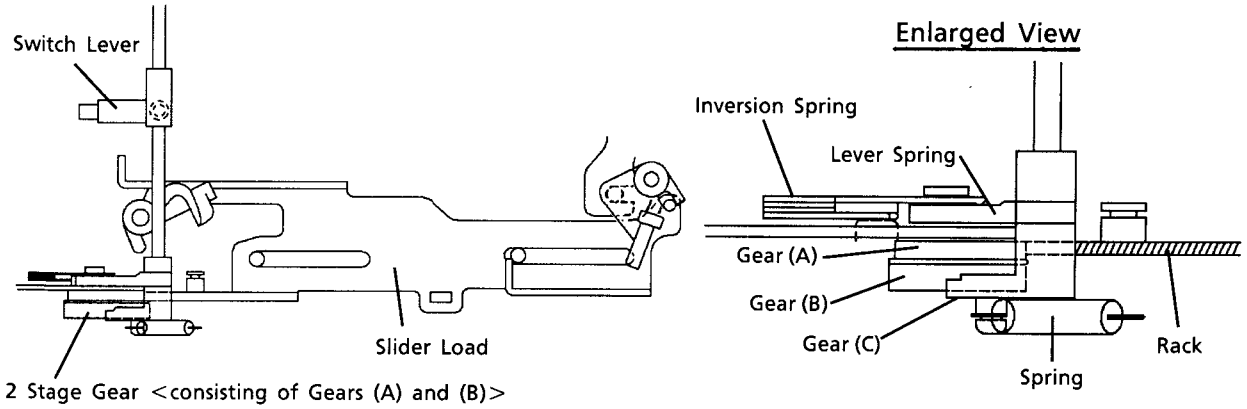
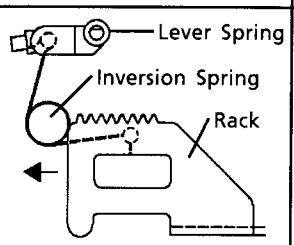
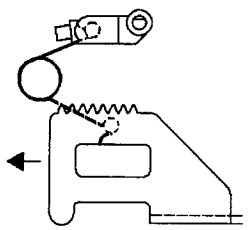
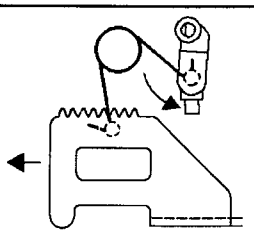
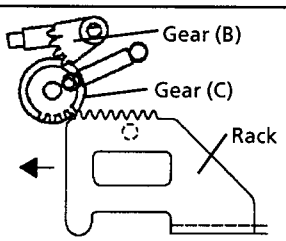
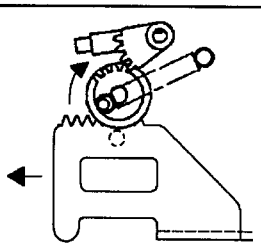
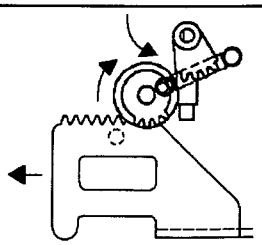
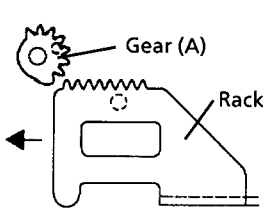
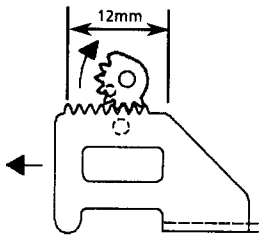
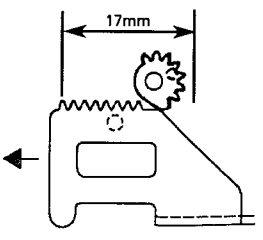


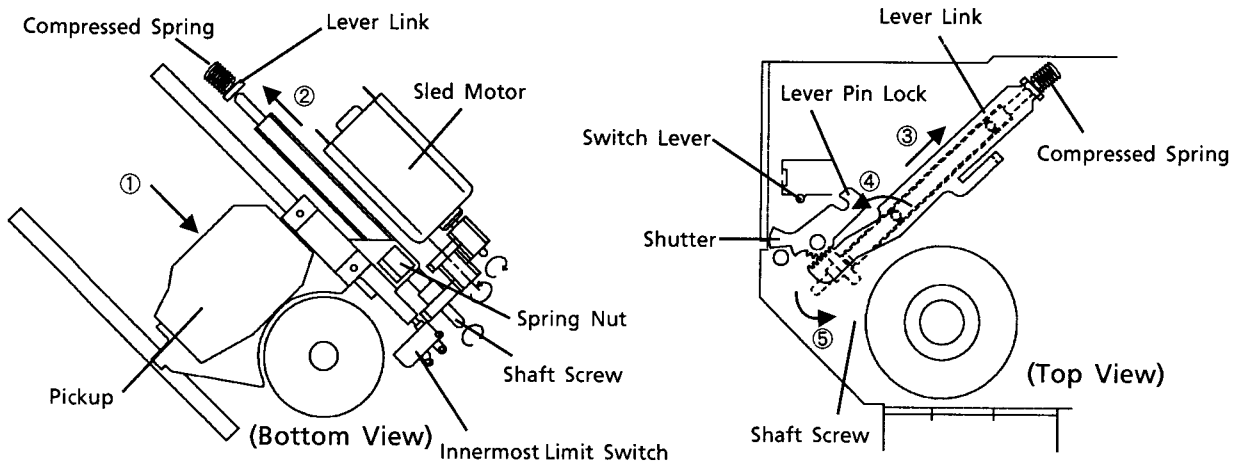
Figure 35

Figure 36

	①	②	③
ⓐ Operations of Inversion Spring and Lever Spring			
ⓑ Operations of Gears (B) and (C)			
ⓒ Operations of Gear (A) and Rack			

Function	Sequence	Operation	Illustration
Operation of Switch Pin Lock	①	When the Pickup moves inner side and touches the stopper, it stops, but the Motor continues to rotate. In this case, the Innermost Limit Switch is pushed and it is determined that the Pickup reached the Innermost end.	Figure 37 ①
	②	As the Spring Nut does not move to inner side, a force (as a reaction) in outer side direction is applied to the Shaft Screw. The Shaft Screw has a clearance in the thrust direction and deviated to inner side direction with a Compressed Spring. As a result, it presses the Spring when the force in outer side direction is applied, and the Shaft moves outer side.	Figure 37 ②
	③	The force in the outer direction is transferred to the Lever Link and the Lever Link moves the outer side in the same way.	Figure 37 ③
	④	The Lever Pin Lock rotates cLockwise through the Rack.	Figure 37 ④
	⑤	The Shutter provided on the Lever Pin Lock moves in direction which interrupts the Photo Sensor (D).	Figure 37 ⑤
	⑥	The Photo Sensor (D) is uninterrupted when the Shaft moves by 3mm. This is detected and used to stop the Motor.	Figure 37 ⑥
	⑦	At this position, the Lever Pin Lock engages the Switch Pin and Locks.	Figure 37 ⑦

Ⓐ Lock operation start



Ⓑ Lock operation complete

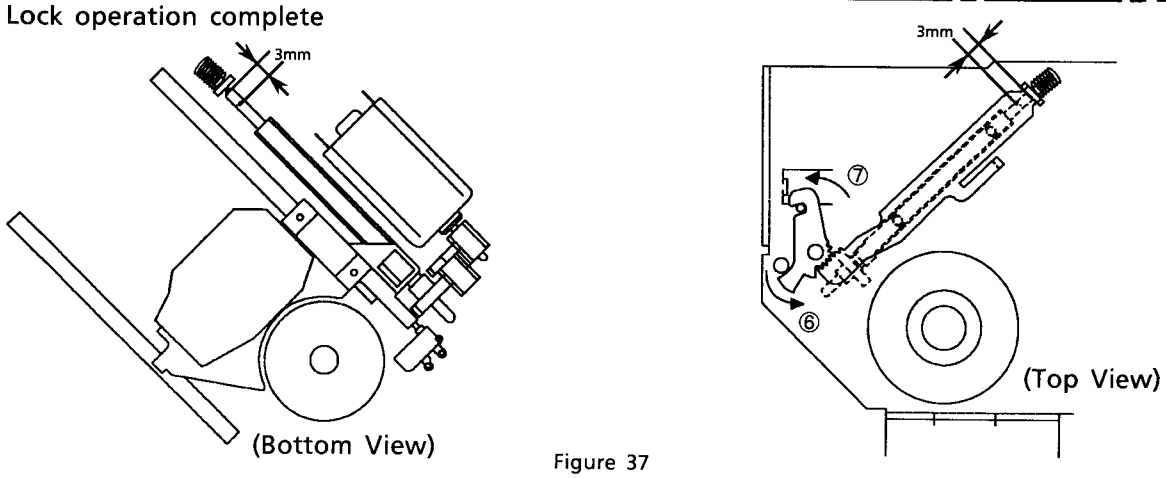
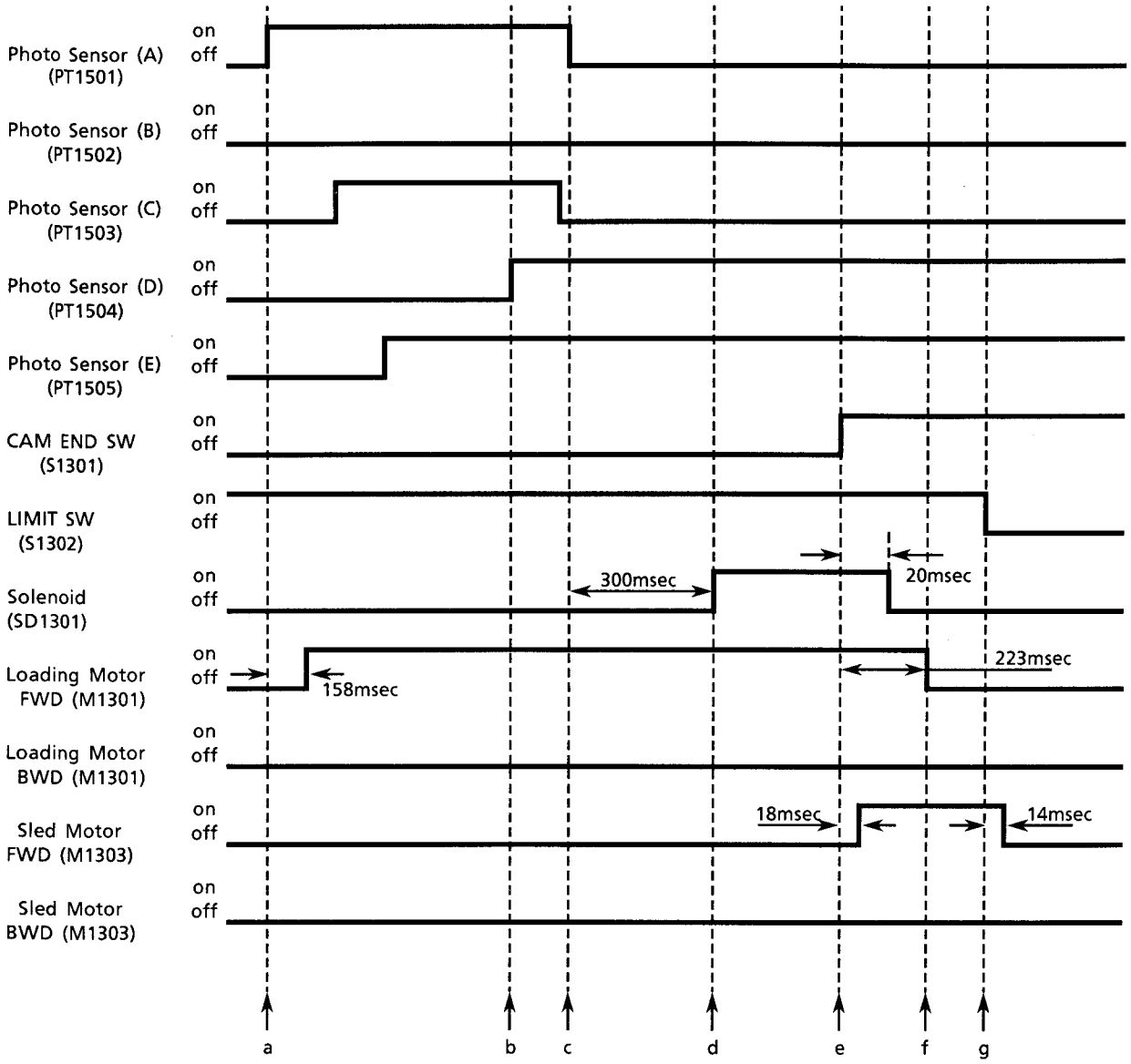


Figure 37

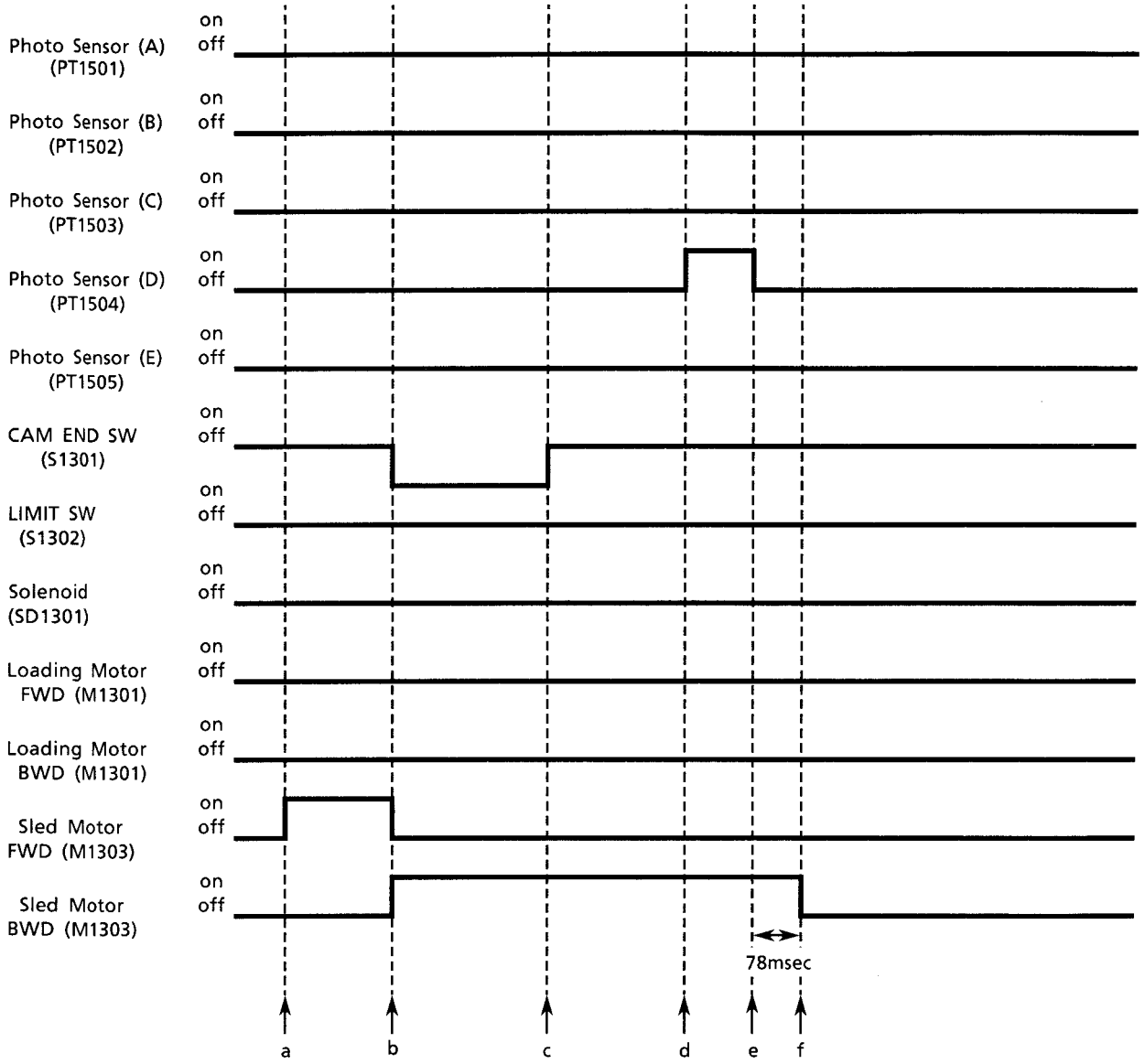
Timing Chart

8cm Disc Loading Timing Chart



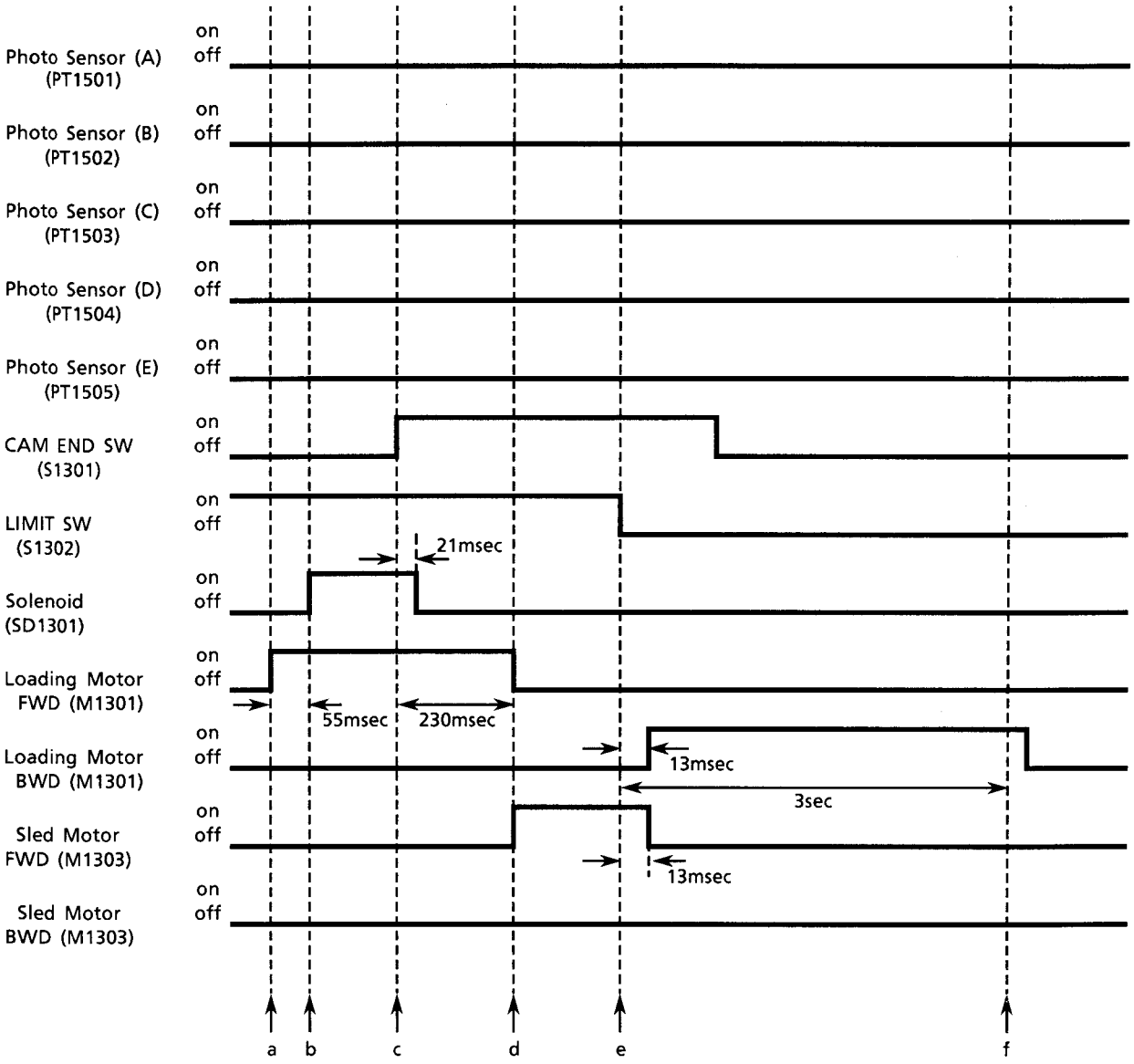
a. With the Photo Sensor (A) turned on, the Loading Motor FWD is turned on.
b. With the Photo Sensors (A) and (C) not turned on at the same time but the Photo Sensor (D) turned on, the disc type is determined as an 8cm Disc.
c. With both of the Photo Sensors (A) and (C) turned off, a 300msed timer is set.
d. With both of the Photo Sensors (A) and (C) turned off after 300msec elapsed, the Solenoid is turned on.
e. With the CAM END SW turned on, the Solenoid is turned off and a 200msec timer is set. At the same time the Sled is moved to outermost side.
f. After 200msec elapsed, the Loading Motor FWD is turned off.
g. With the LIMIT SW turned off, the Sled Motor FWD is turned off.

Lock on Timing Chart



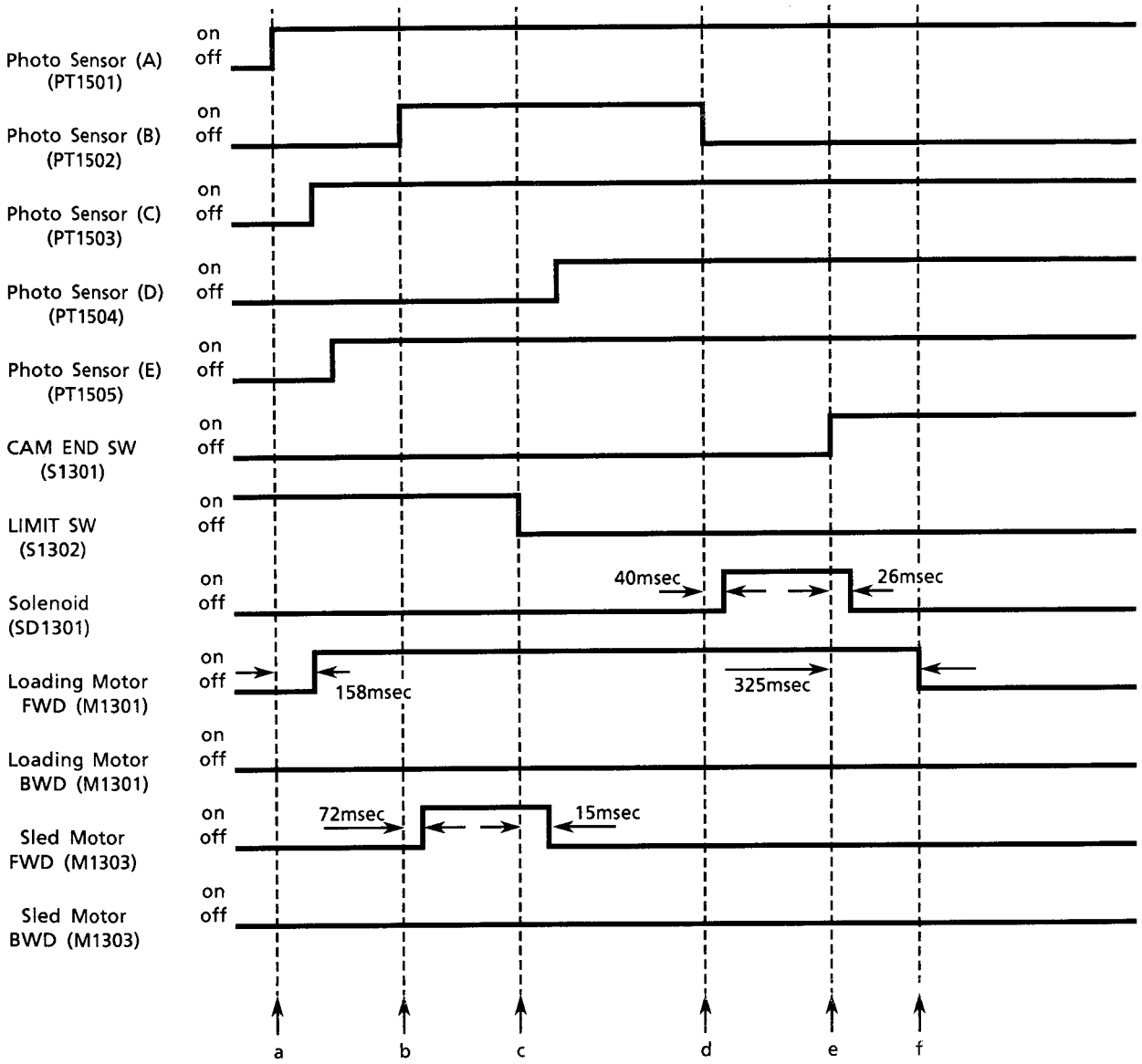
a. As the LIMIT SW is on, the Sled is once moved to the outermost side to turn off the LIMIT SW.
b. With the LIMIT SW turned off, the Sled is moved to the innermost side.
c. The LIMIT SW is turned on.
d. Photo Sensor (D) is turned on.
e. With the Photo Sensor (D) turned off, a 65msec timer is set.
f. After 65msec elapsed, the Sled Motor is turned off.

Single Guard on Timing Chart



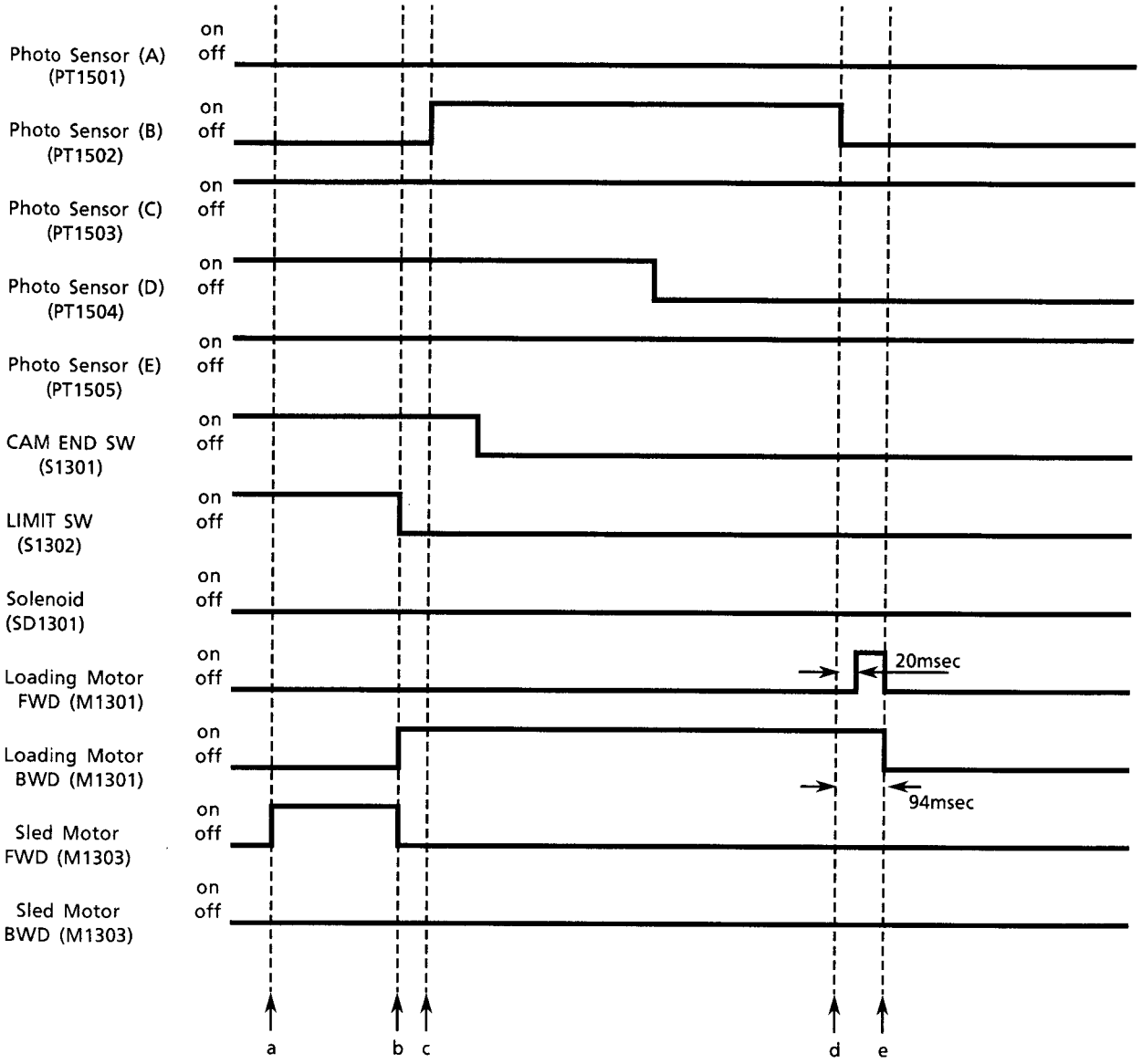
a. The Loading Motor FWD is turned on and a 50msec timer is set.
b. After 50msec elapsed, the Solenoid is turned on.
c. With the CAM END SW turned on, the Solenoid is turned off. The 200msec timer is set.
d. After 200msec elapsed, the Loading Motor FWD is turned off. As the LIMIT SW is turned on, the Sled is moved to the outermost side and the lock is released.
e. With the LIMIT SW turned off, the Sled is turned off. The Loading Motor BWD is turned on and a 3sec timer is set.
f. After 3sec elapsed, the Loading Motor BWD is turned off.

12cm Disc Loading Timing Chart



a. With the Photo Sensor (A) turned on, the Loading Motor FWD is turned on.
b. As the Photo Sensors (B) and (C) are turned on, the disc type is determined as a 12cm disc. The Sled is moved to the outermost side to release the lock.
c. With the LIMIT SW turned off, the Sled is turned off.
d. As the Photo Sensor (B) is turned off and the Photo Sensor (D) is on, the Solenoid is turned on.
e. With the CAM END SW turned on, the Solenoid is turned off and the 200msec timer is set.
f. After 200msec elapsed, the Loading Motor FWD is turned off.

12cm Disc Eject Timing Chart

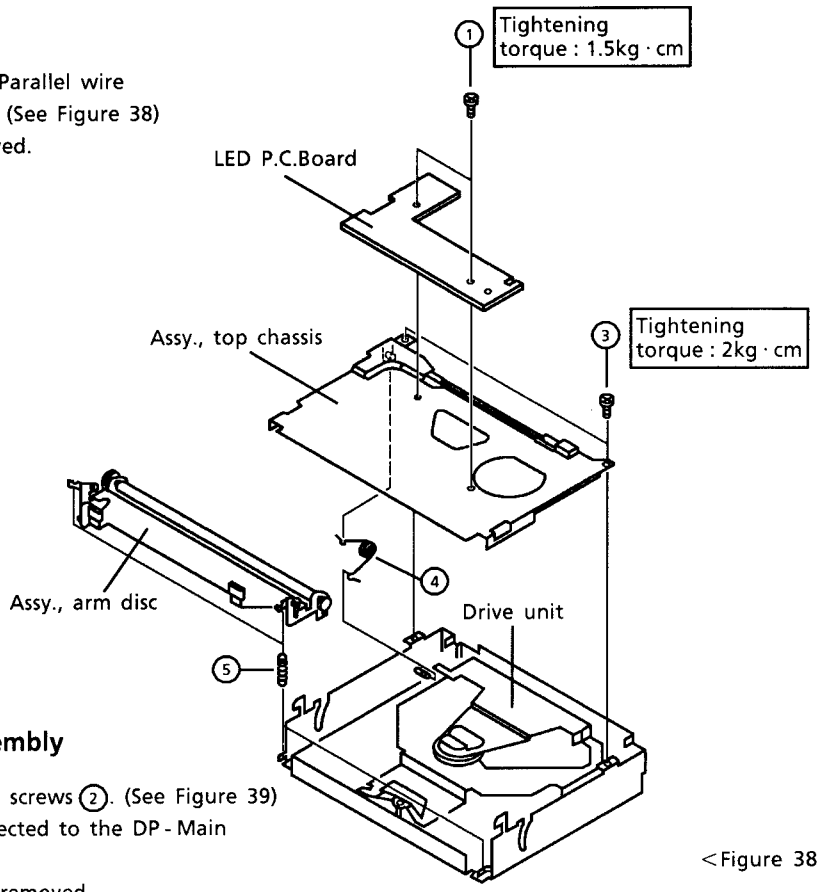


a. As the LIMIT SW is turned on, the Sled is moved to the outermost side to release the lock.
b. With the LIMIT SW turned off, the Sled is Turned off. The Loading Motor BWD is turned on.
c. The Photo Sensor (B) is turned on.
d. With the Photo Sensor (B) turned off, the Loading Motor FWD is set and the 50msec timer is set. (Brake ON).
e. After 50msec elapsed, the Loading Motor FWD and the Loading Motor BWD are turned off.

Component disassembly and assembly notes

1. LED P.C.Board disassembly

(1) Remove two screws ① and the Parallel wire connected to the LED P.C.Board. (See Figure 38)
The LED P.C.Board can be removed.



<Figure 38>

2. DP - Main P.C.Board disassembly

(1) Remove the Solder Ⓐ and three screws ②. (See Figure 39)
(2) Remove the all connectors connected to the DP - Main P.C.Board.
The DP - Main P.C.Board can be removed.

<Assembly note>

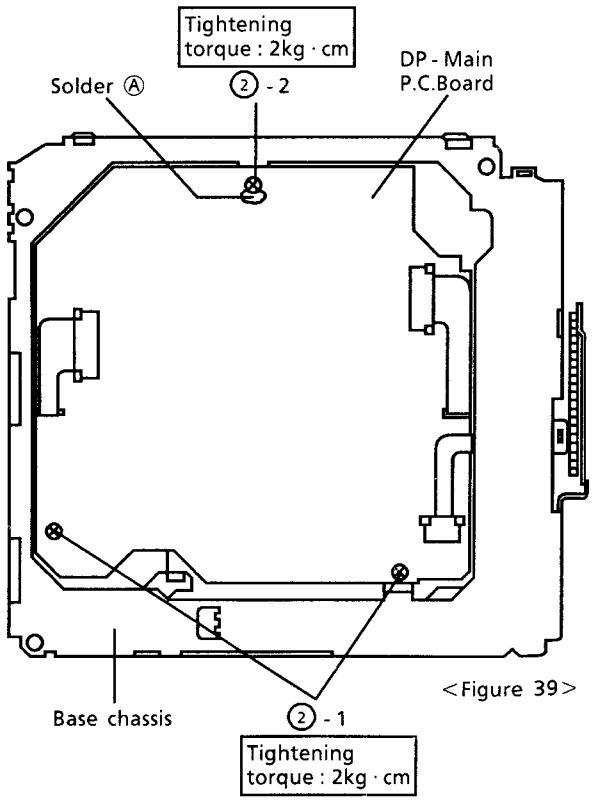
● The screw ②- 2 type is different from that of the screws ②- 1.

3. Drive unit disassembly

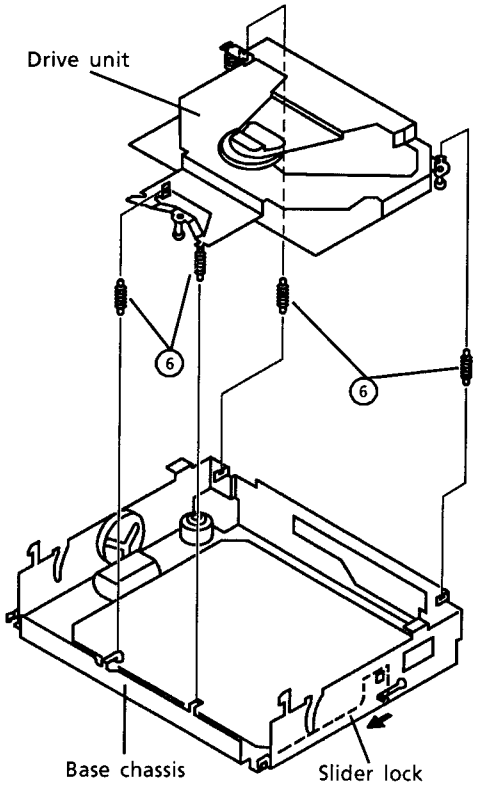
(1) Remove two screws ③ and one spring ④, the Assy., top chassis can be removed. (See Figure 38)
(2) Remove two springs ⑤, the Assy., arm disc can be removed. (See Figure 38)
(3) Remove four springs ⑥, pull up the Drive unit. (See Figure 40)
The Drive unit can be removed.

<Assembly note>

● Move the Slider lock fully in the direction indicated by the arrow. (See Figure 40)



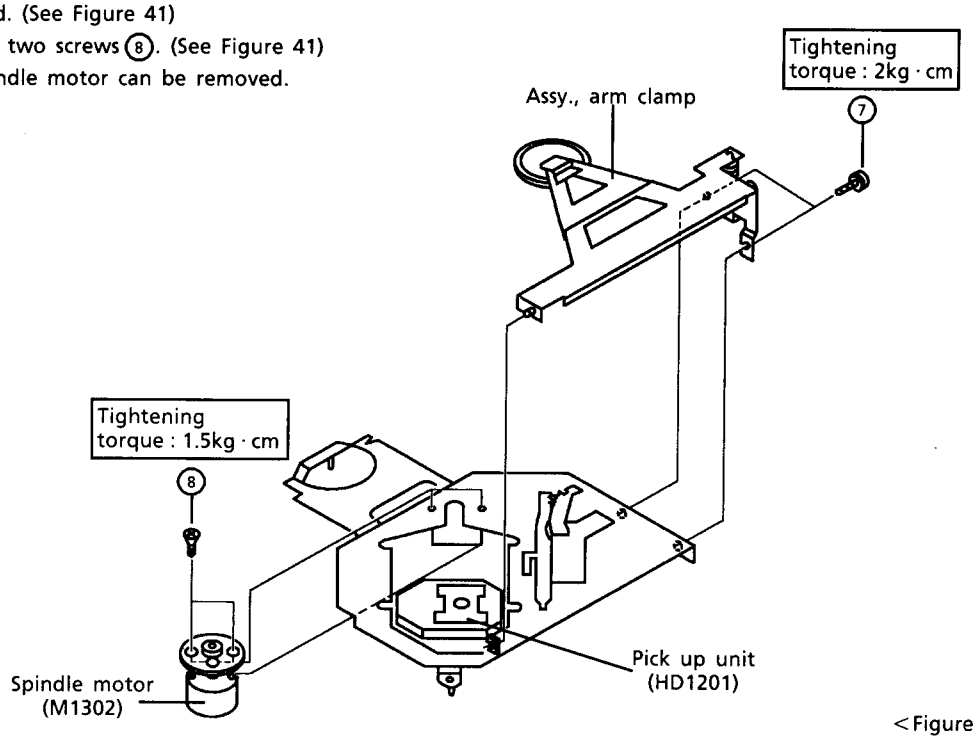
<Figure 39>



<Figure 40>

4. Spindle motor (M1302) disassembly

(1) Remove two screws (7), the Assy., arm clamp can be removed. (See Figure 41)
(2) Remove two screws (8). (See Figure 41)
The Spindle motor can be removed.



<Figure 41>

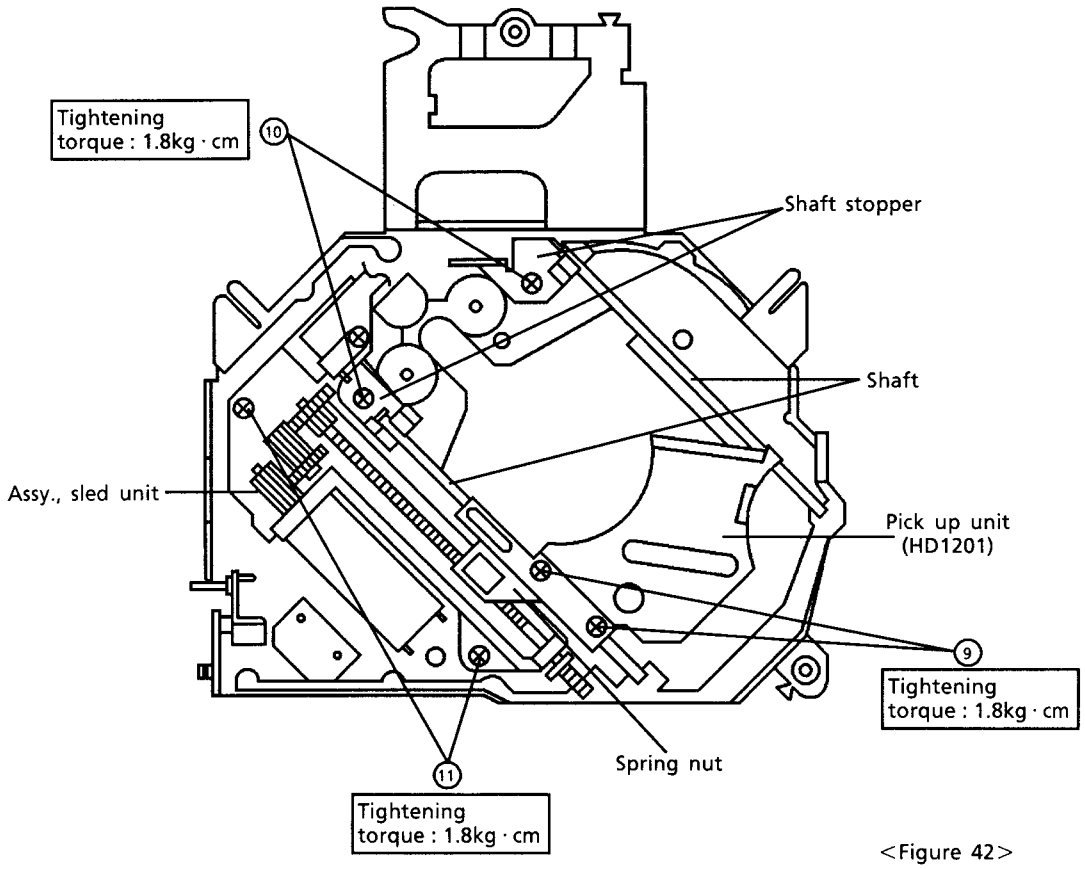
5. Pick up unit (HD1201) disassembly

- Wear an electrostatic discharge band when disassembling the Pick up unit. Do not touch the lens or P.C.Board.

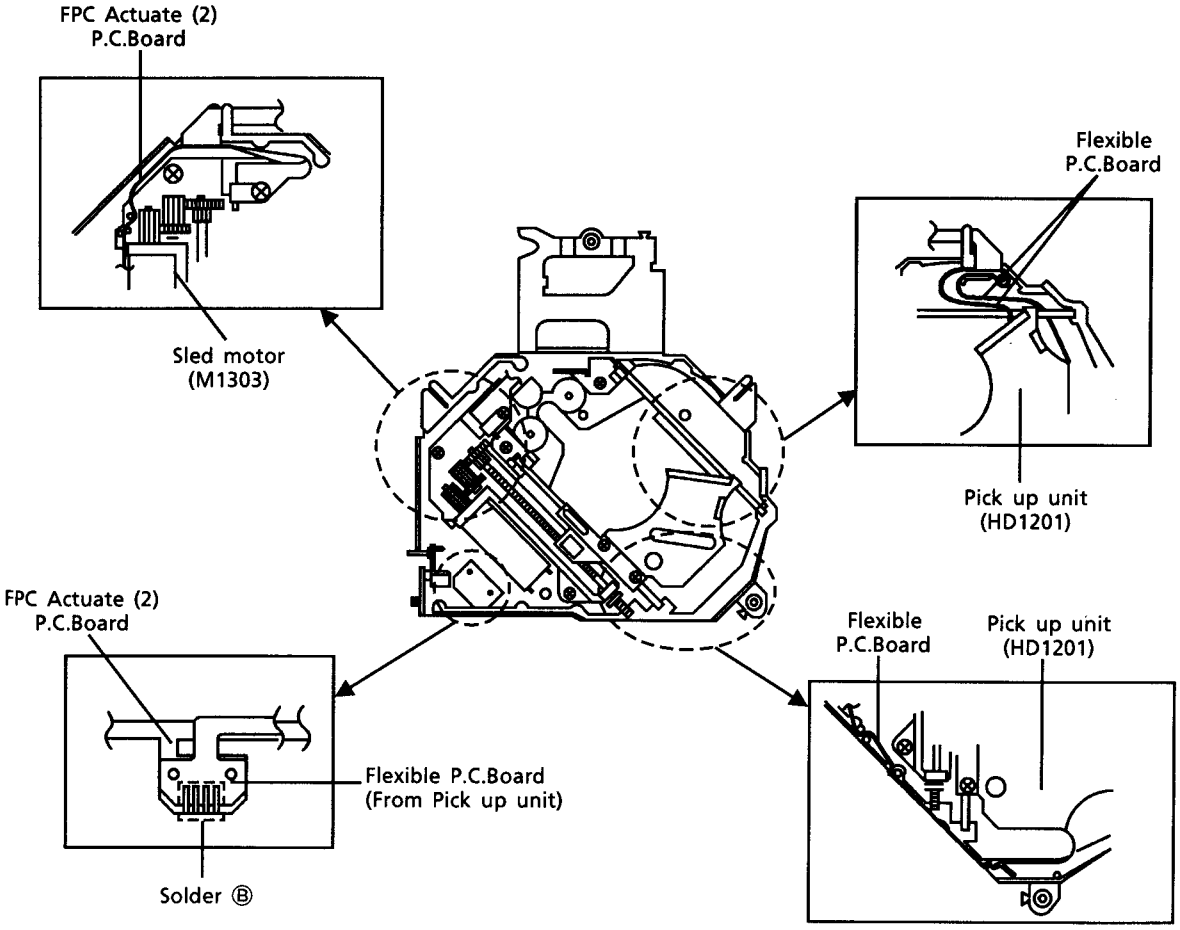
(1) Remove two screws ⑨, the Spring nut can be removed. (See Figure 42)
(2) Remove two screws ⑩, the two Shaft stopper can be removed. (See Figure 42)
(3) Remove two Shaft. (See Figure 42)
(4) Remove the Solder Ⓑ connected between FPC Actuate (2) P.C.Board and Flexible P.C.Board (Pick up unit). (See Figure 43)
Note : Don't cut Flexible P.C.Board by removing Solder Ⓑ. The Pick up unit can be removed.

<Assembly notes>

- Always wear an electrostatic discharge band.
- Never touch the lens of the Pick up unit or P.C.Board.
- Form the two Flexible P.C.Board from the Pick up unit as shown in Figure 43.



<Figure 42>



6. Sled motor (M1303) disassembly

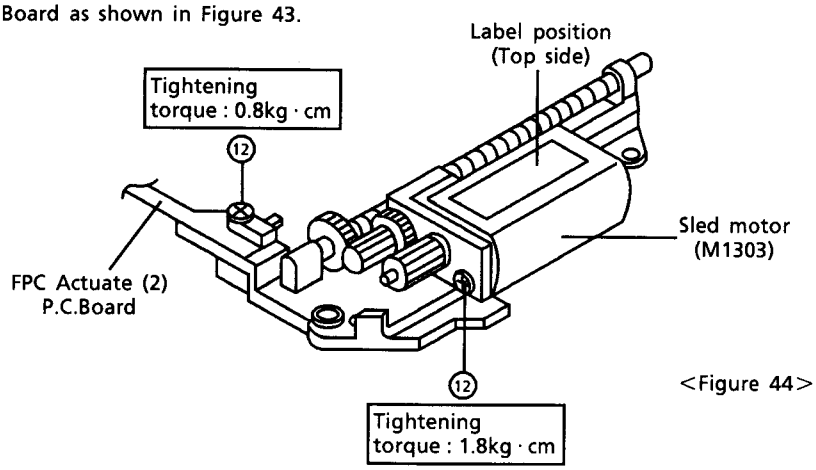
<Figure 43>

(1) Remove two screws ⑪, the Assy., sled unit can be removed. (See Figure 42)

(2) Remove two screws ⑫. (See Figure 44)
The Sled motor with FPC Actuate (2) P.C.Board can be removed.

<Assembly notes>

- Mount the Sled motor (M1303) so the label position is correct. (See Figure 44)
- Form the FPC Actuate (2) P.C.Board as shown in Figure 43.



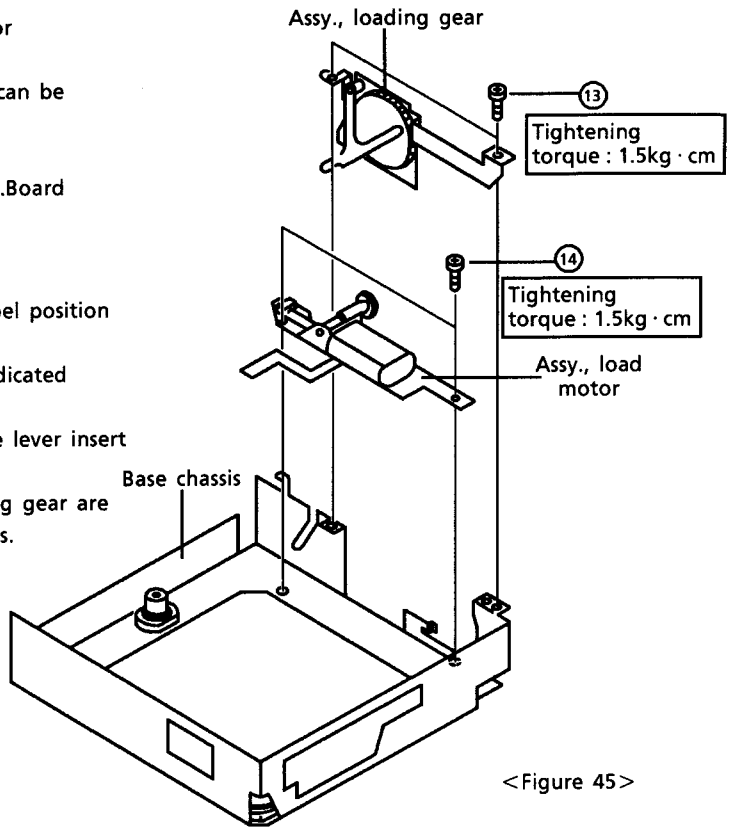
<Figure 44>

7. Loading motor (M1301) disassembly

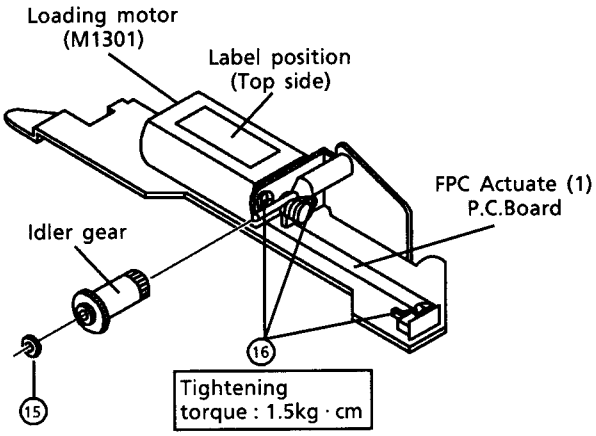
(1) Remove two screws ⑬, the Assy., loading gear can be removed. (See Figure 45)
(2) Remove two screws ⑭, the Assy., load motor can be removed. (See Figure 45)
(3) Remove a washer ⑮ (M1.2), the Idler gear can be removed. (See Figure 46)
(4) Remove three screws ⑯. (See Figure 46)
The Loading motor with FPC Actuate (1) P.C.Board can be removed.

<Assembly notes>

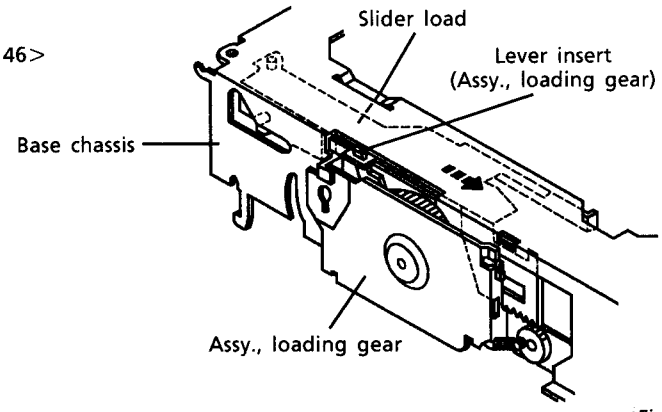
- Mount the Loading motor (M1301) so the label position is correct. (See Figure 46)
- Move the Slider load fully in the direction indicated by the arrow. (See Figure 47)
- When the Assy., loading gear is assemble, the lever insert a hole of the Slider load. (See Figure 47)
- When the Assy., load motor and Assy., loading gear are assemble, first set position next tighten screws.



<Figure 45>



<Figure 46>



<Figure 47>

MEMO

Schematic Diagram

	IC	IC1103	IC1507	IC1102	IC1109	IC1106	IC1101	IC1210
1	Transistor (Q,PT)	PT1501 PT1502 PT1503 PT1504 PT1505 Q1103 Q1502 Q1501 Q1503 Q1508 Q1111 Q1102 Q1114 Q1112 Q1115 Q1113 Q1116						

LED P.C.Board

DP-Main P.C.Board

Pick Up Unit (HD1201)

IC1101 TC9236AF DIGITAL SIGNAL PROCESSOR

IC1102 TA8191F RF AMP SERVO CONTROL

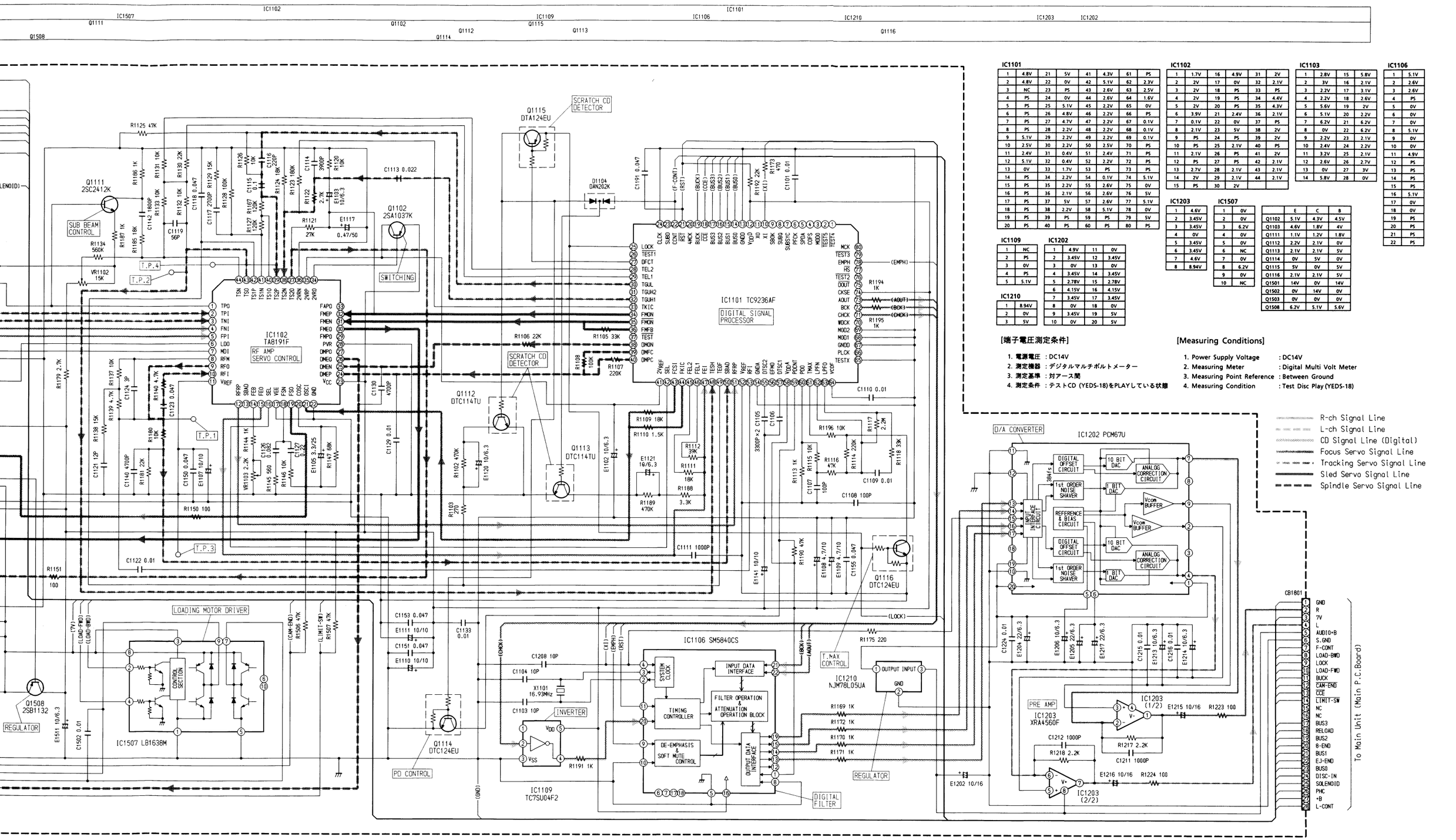
IC1103 BA6298FP

IC1106 SM5840CS

IC1507 LB1638M

IC1109 TC7SU04F2

[注記]
1. Cの単位：C無
2. Rの単位：R無



IC1101

1	4.8V	21	5V	41	4.3V	61	PS
2	4.8V	22	0V	42	5.1V	62	2.3V
3	NC	23	PS	43	2.6V	63	2.5V
4	PS	24	0V	44	2.6V	64	1.6V
5	PS	25	5.1V	45	2.2V	65	0V
6	PS	26	4.8V	46	2.2V	66	PS
7	PS	27	4.7V	47	2.2V	67	0.1V
8	PS	28	2.2V	48	2.2V	68	0.1V
9	5.1V	29	2.2V	49	2.2V	69	0.1V
10	2.5V	30	2.2V	50	2.5V	70	PS
11	2.4V	31	0.4V	51	2.4V	71	PS
12	5.1V	32	0.4V	52	2.2V	72	PS
13	0V	33	1.7V	53	PS	73	PS
14	PS	34	2.2V	54	0.1V	74	5.1V
15	PS	35	2.2V	55	2.6V	75	0V
16	PS	36	2.1V	56	2.6V	76	5V
17	PS	37	5V	57	2.6V	77	5.1V
18	PS	38	2.2V	58	5.1V	78	0V
19	PS	39	PS	59	PS	79	5V
20	PS	40	PS	60	PS	80	PS

IC1102

1	1.7V	16	4.9V	31	2V
2	2V	17	0V	32	2.1V
3	2V	18	PS	33	PS
4	2V	19	PS	34	4.4V
5	2V	20	PS	35	4.3V
6	3.9V	21	2.4V	36	2.1V
7	0.1V	22	0V	37	PS
8	2.1V	23	5V	38	2V
9	PS	24	PS	39	2V
10	PS	25	2.1V	40	PS
11	2.1V	26	PS	41	2V
12	PS	27	PS	42	2.1V
13	2.7V	28	2.1V	43	2.1V
14	2V	29	2.1V	44	2.1V
15	PS	30	2V		

IC1103

1	2.8V	15	5.8V
2	3V	16	2.1V
3	2.2V	17	3.1V
4	2.2V	18	2.6V
5	5.6V	19	2V
6	5.1V	20	2.2V
7	6.2V	21	6.2V
8	0V	22	6.2V
9	2.2V	23	2.1V
10	2.4V	24	2.2V
11	3.2V	25	2.1V
12	2.6V	26	2.7V
13	0V	27	3V
14	5.8V	28	0V

IC1106

1	5.1V
2	2.6V
3	2.6V
4	PS
5	0V
6	0V
7	0V
8	5.1V
9	0V
10	0V
11	4.9V
12	PS
13	PS
14	PS
15	PS
16	5.1V
17	0V
18	0V
19	PS
20	PS
21	PS
22	PS

IC1203

1	4.6V
2	3.45V
3	3.45V
4	0V
5	3.45V
6	3.45V
7	4.6V
8	8.94V

IC1507

1	0V
2	0V
3	6.2V
4	0V
5	0V
6	NC
7	0V
8	6.2V
9	0V
10	NC

IC1109

1	NC
2	PS
3	0V
4	PS
5	5.1V

IC1202

1	4.9V	11	0V
2	3.45V	12	3.45V
3	0V	13	0V
4	3.45V	14	3.45V
5	2.78V	15	2.78V
6	4.15V	16	4.15V
7	3.45V	17	3.45V
8	0V	18	0V
9	3.45V	19	5V
10	0V	20	5V

IC1210

1	8.94V
2	0V
3	5V

	E	C	B
Q1102	5.1V	4.3V	4.5V
Q1103	4.6V	1.8V	4V
Q1111	1.1V	1.2V	1.8V
Q1112	2.2V	2.1V	0V
Q1113	2.1V	2.1V	5V
Q1114	0V	5V	0V
Q1115	5V	0V	5V
Q1116	2.1V	2.1V	5V
Q1501	14V	0V	14V
Q1502	0V	14V	0V
Q1503	0V	0V	0V
Q1508	6.2V	5.1V	5.6V

[端子電圧測定条件]

1. 電源電圧 : DC14V
2. 測定機器 : デジタルマルチボルトメーター
3. 測定基準 : 対アース間
4. 測定条件 : テストCD (YEDS-18)をPLAYしている状態

[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Volt Meter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : Test Disc Play (YEDS-18)

R-ch Signal Line
L-ch Signal Line
CD Signal Line (Digital)
Focus Servo Signal Line
Tracking Servo Signal Line
Sled Servo Signal Line
Spindle Servo Signal Line

[注記]

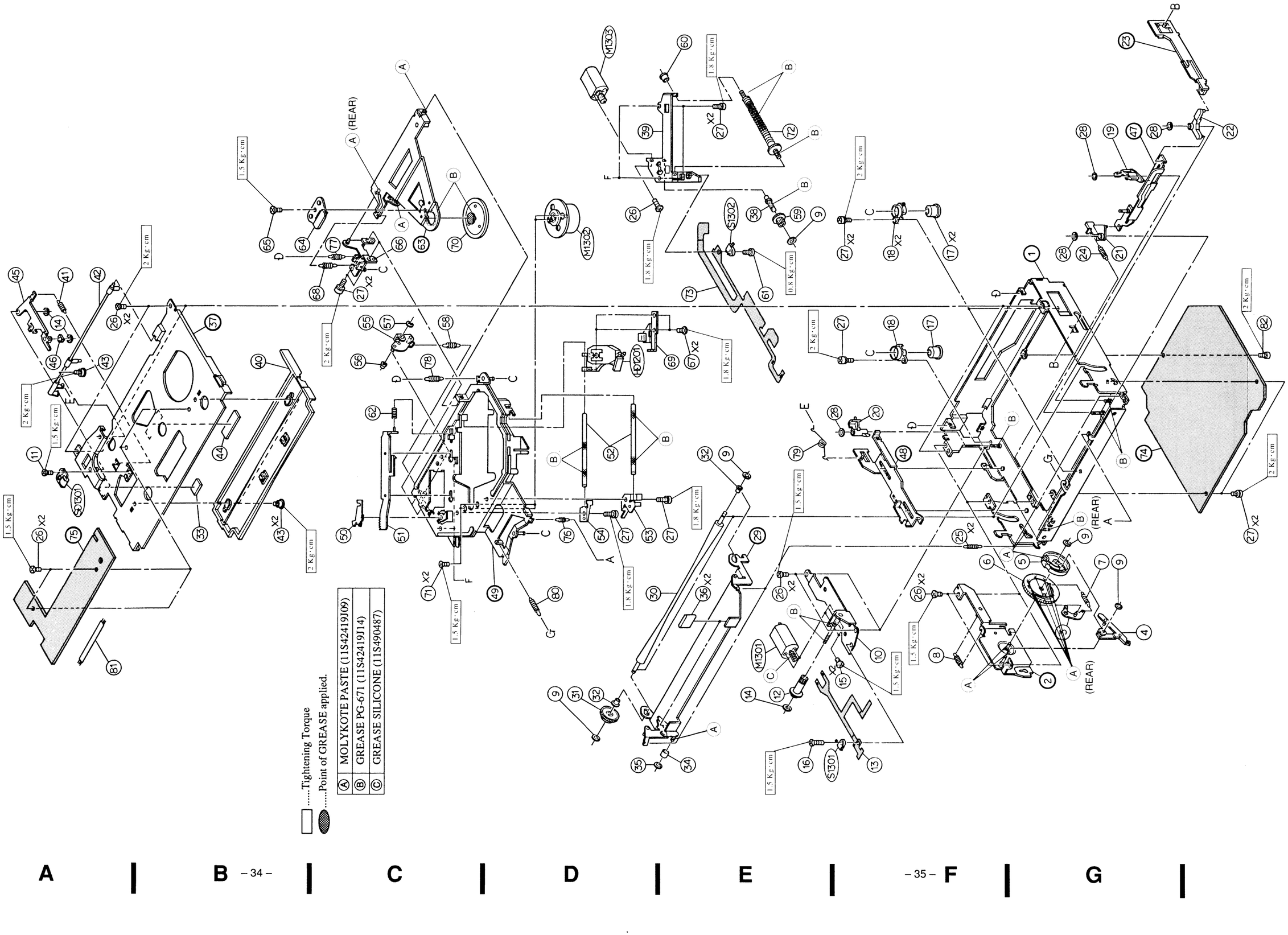
1. Cの単位：C無記入→μF、P→PF、／V→耐電圧を示す。
2. Rの単位：R無記入→Ω、K→KΩ、M→MΩ

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

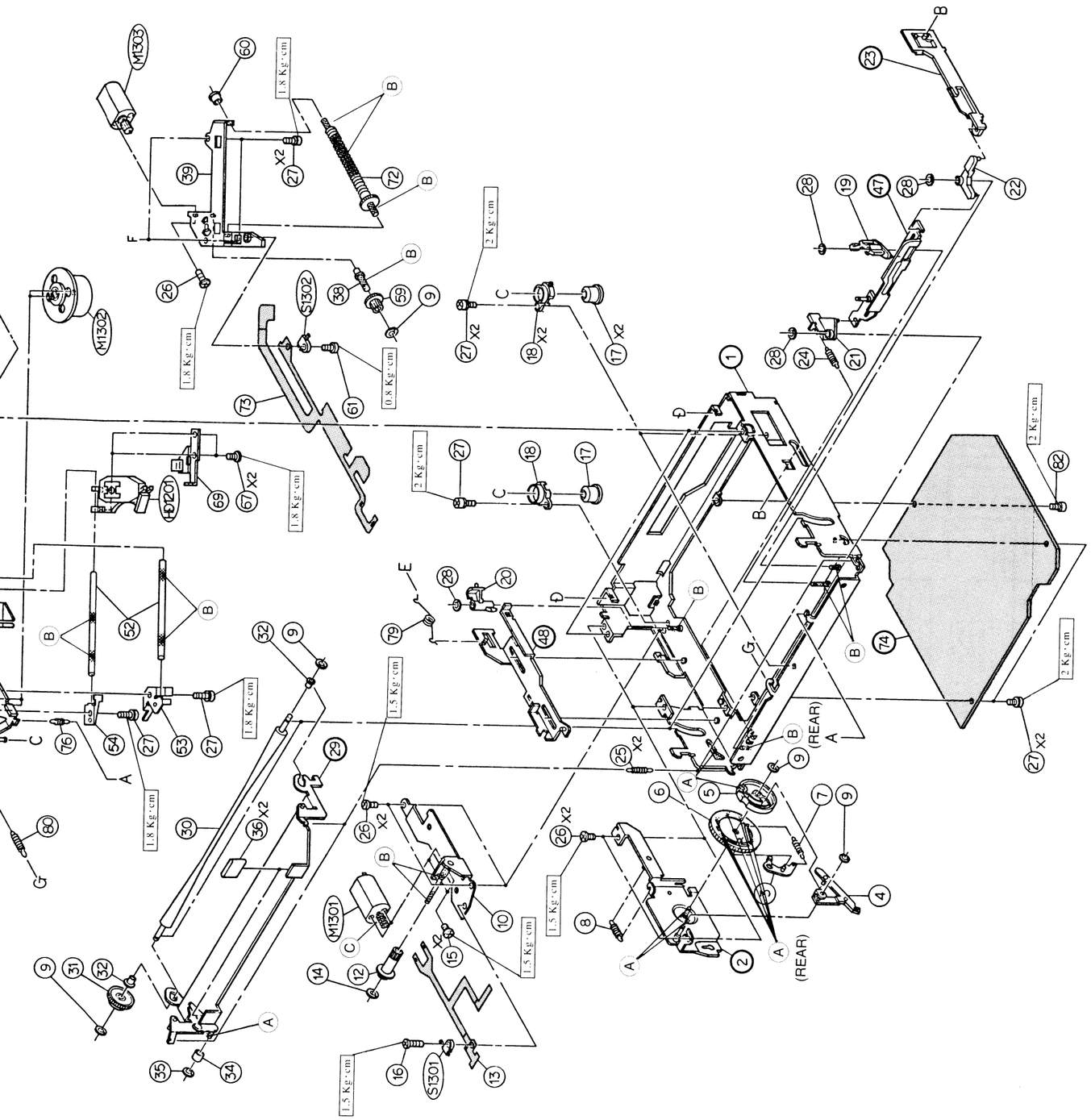
DP-H SERIES DP-H SERIES

Exploded View (CD Mechanism)



CD Mec

Symbol No.	Index
3	4-G
4	4-G
5	4-G
6	4-F
7	4-G
8	4-F
9	
10	4-F
11	3-A
12	5-E
13	5-F
14	
15	5-F
16	5-E
17	
18	
19	2-G
20	3-F
21	2-G
22	2-H
24	2-G
25	4-F
26	
27	
28	
30	4-D
31	5-D
32	
33	4-B
34	5-E
35	5-D
36	4-E
38	2-E
39	2-D
40	3-B
41	2-A
42	2-A
43	
44	3-B
45	2-A
46	3-A
50	4-C
51	4-C
52	3-D
53	4-D
54	4-D
55	3-C



CD Mechanism Assembly Parts List

Note : No parts number on parts list are not supplied.

Symbol No.	Index	Part No.	Description
3	4-G	01A50856W01	Assy., Riv. Timing
4	4-G	01A50854W01	Assy., Riv. Lever Cam
5	4-G	45B50814W01	Cam, Loading
6	4-F	44B50813W01	Gear, Cam
7	4-G	41B50978W02	Spring, Pull
8	4-F	41B50978W05	Spring, Pull
9		04B41345P12	Washer, Lock (M1.7)
10	4-F	01A50852W01	Assy., Riv. Bracket Motor
11	3-A	03S94385F02	Screw, Pan (M1.7×3)
12	5-E	44B50812W01	Gear, Idler
13	5-F	84T55236W01	FPC Actuate(1) P.C.Board
14		04B41345P15	Washer, Lock (M1.2)
15	5-F	03S94385F07	Screw, Pan (M2×2)
16	5-E	03S94385F11	Screw, Pan (M2×5.2)
17		75B58086W01	Damper, DP-H
18		15A40136W01	Holder, Damper-S
19	2-G	45B50815W01	Arm, Lock (F)
20	3-F	45B50816W01	Arm, Lock (R)
21	2-G	45A50817W01	Arm, Link (L)
22	2-H	45A50818W01	Arm, Link (R)
24	2-G	41B50978W01	Spring, Pull
25	4-F	41B50978W04	Spring, Pull
26		03S94385F09	Screw, Pan (M2×3)
27		03S40014G07	Screw, W/Washer (M2×4)
28		04B41345P45	Washer, Lock (M2.1)
30	4-D	49B51428W01	Roller, (G) DP-H
31	5-D	01T55276W01	Assy., Clutch DP-H
32		43A51504W01	Bush, Roller
33	4-B	75A58090W01	Sheet, Arm Solenoid
34	5-E	43A50843W01	Roller, Link
35	5-D	04B41345P18	Washer, Lock (M1.2)
36	4-E	75A58084W01	Rubber, Arm Guide
38	2-E	46A50694W01	Stud, Middle
39	2-D	07B50702W01	Bracket, Motor
40	3-B	15C50819W01	Guide, Top DP-H
41	2-A	41B50978W03	Spring, Pull
42	2-A	01V53900W76	Assy., Arm Stopper
43		03A58045W01	Screw, Special (M2×3.9)
44	3-B	75A58082W01	Sheet, Mag DP-H
45	2-A	01A50849W01	Assy., Riv. Arm Solenoid
46	3-A	07A50997W01	Plate, Solenoid
50	4-C	45A50678W01	Lever, Pinlock
51	4-C	45B50676W01	Lever, Link
52	3-D	47A50698W01	Shaft, Pickup
53	4-D	07A50688W01	Stopper, Shaft (A)
54	4-D	07A50689W01	Stopper, Shaft (B)
55	3-C	01A50673W01	Assy., Riv. Lever Arm

Symbol No.	Index	Part No.	Description
56	3-C	43A50701W01	Bush, Lever
57	3-C	04C42091G06	Ring, "E" (M1.5)
58	3-C	41B50978W06	Spring, Pull
59	2-E	44A50680W01	Gear, Middle
60	1-E	43A50684W01	Bush, Slider
61	2-E	03S70494F12	Screw, Pan (M2×8)
62	3-C	41A50707W01	Spring, Comp
64	2-B	07A50687W01	Stopper, Clamp
65	2-B	03S94385F01	Screw, Pan (M1.7×2.3)
66	2-C	01A50672W01	Assy., Riv. Bracket Arm Clamp
67	3-E	03S94385F32	Screw, Pan (M2×2.2)
68	2-C	41B50978W07	Spring, Pull
69	3-F	41A50682W01	Spring, Nut
70	2-C	43A50683W01	Table, Clamper
71	4-C	03S94385F29	Screw, Countersink (M1.7×4)
72	2-E	01V51800W71	Assy., Shaft Screw
73	2-E	84T55237W01	FPC Actuate(2) P.C.Board
76	4-D	41B50978W08	Spring, Pull
77	2-C	41B50978W09	Spring, Pull
78	3-C	41B50978W10	Spring, Pull
79	3-E	41A50977W01	Spring, Lever
80	4-D	41B50978W11	Spring, Pull
81	4-A	30T25426W03	Wire, Parallel (3P)
82	3-H	03S43997P61	Screw, Round (M2×4)

Miscellaneous

HD1201	3-D	88T55261W01	Pick Up Unit
M1301	4-E	01V53900W77	Assy., Loading Motor (3.5V-110mA)
M1302	2-D	59T55262W01	Motor, Spindle (3V-120mA)
M1303	1-D	01V54100W69	Assy., Sled Motor (3.5V-110mA)
S1301	5-E	40T71025F03	Switch, Detector (CAM END)
S1302	2-E	40T71025F03	Switch, Detector (LIMIT)
SD1301	4-A	01T55277W01	Assy., Solenoid DP-H